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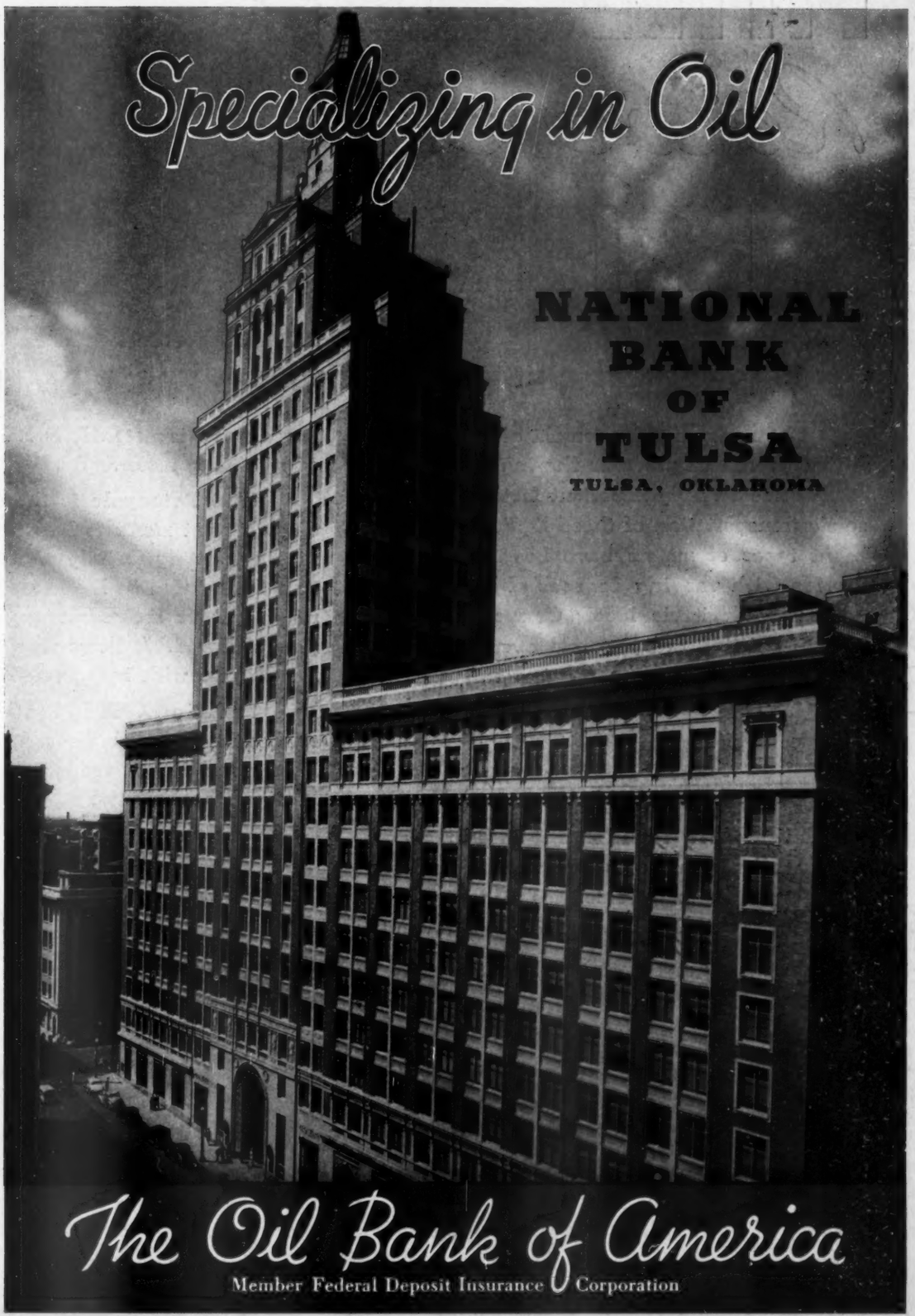

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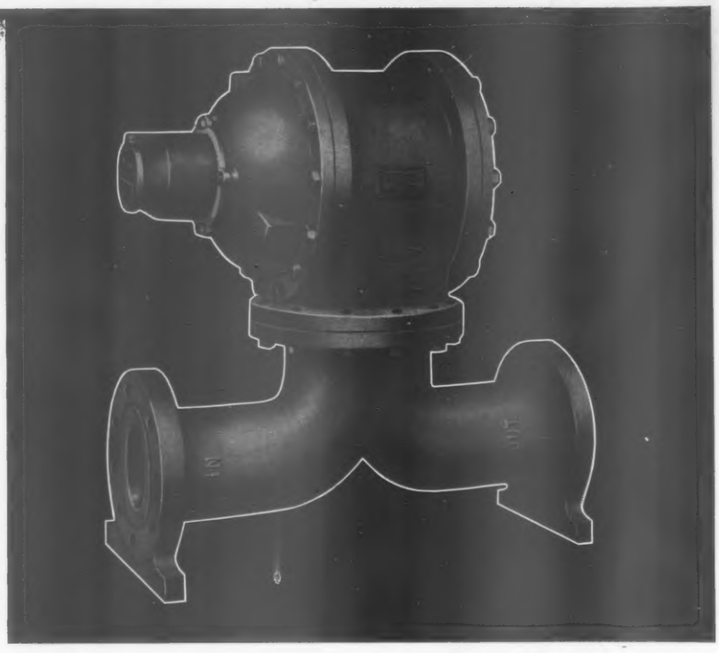

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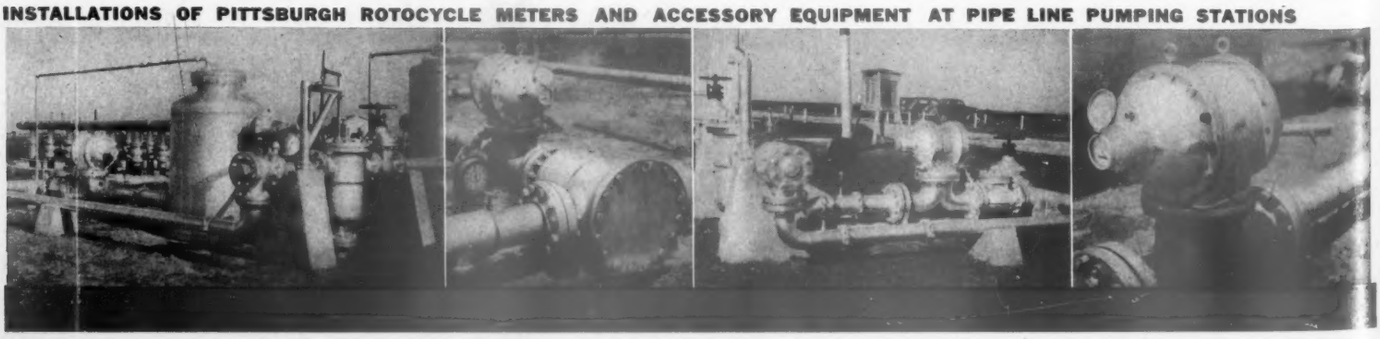

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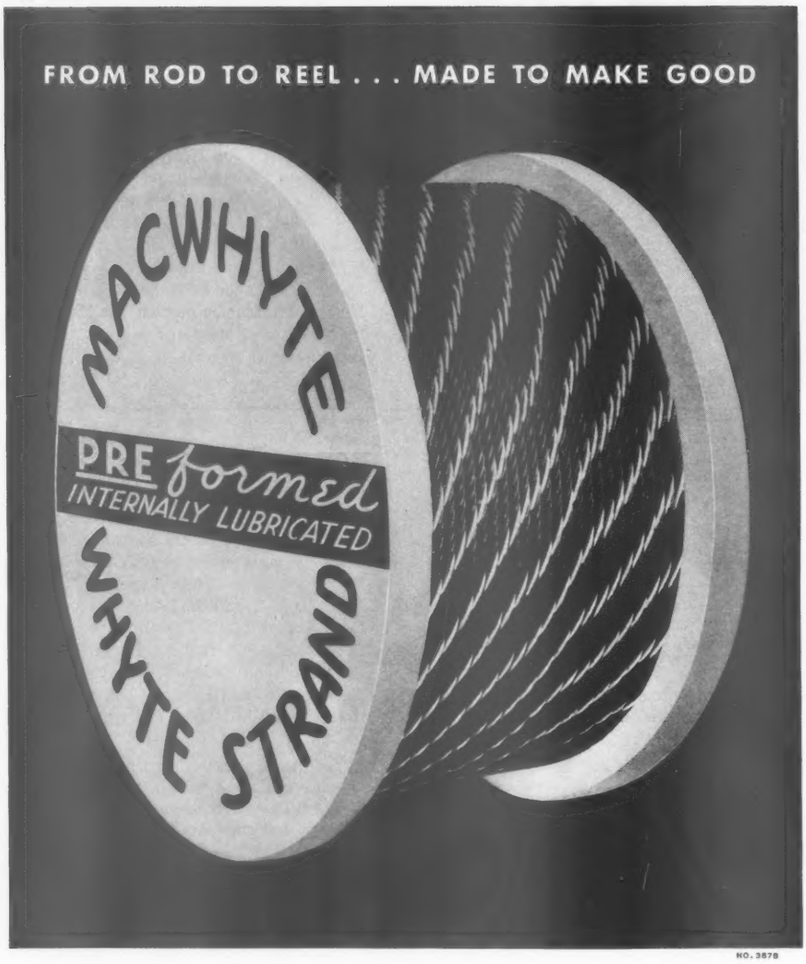

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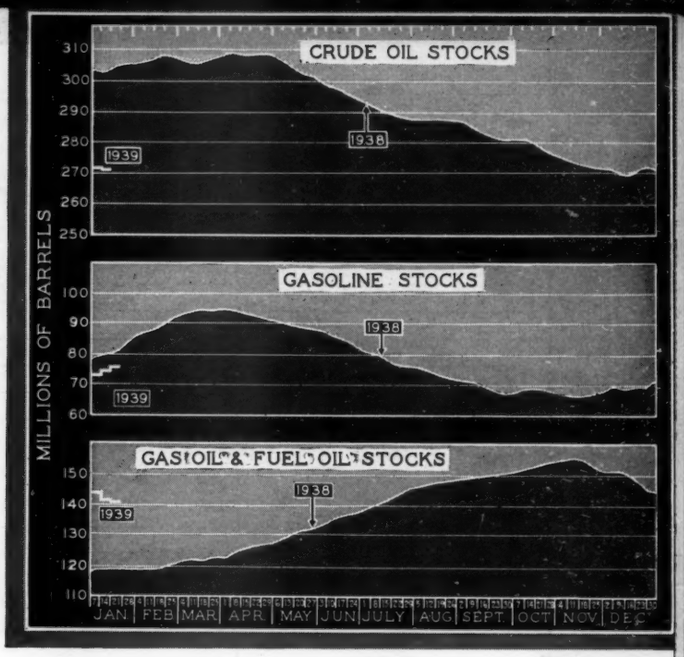
Trends

Higher Postings for Pennsylvania Grade Crude Reverse Trend



A CHEERING development of the week was the action of the South Penn Oil Co. last Saturday in advancing the posted price for crude 12 cents in the Allegany, Bradford, Middle District, and southeastern Ohio fields and 9 cents in southwestern Pennsylvania and West Virginia. Although these advances will have no direct effect on other producing areas, they nevertheless offer encouragement.

CRUDE PRODUCTION *3,270,691 barrels daily average — up 23,646. One year ago 3,508,103 barrels.*

CRUDE STOCKS *271,819,000 barrels as of January 14 — down 506,000. One year ago 303,679,000 barrels.*

GASOLINE STOCKS *75,455,000 barrels as of January 21—up 1,703,000. One year ago 83,007,000 barrels.*

GAS AND FUEL OIL STOCKS *141,091,000 barrels as of January 21—down 1,369,000. One year ago 119,860,000 barrels.*

REFINERY RUNS *3,310,000 barrels daily week ending January 21 — up 50,000. One year ago 3,158,000 barrels.*

The higher postings followed four months of keeping production within demand, after 16 months of overproduction had dragged prices from an eight-year high, established in June, 1937, to a five-year low on September 1, 1938. Overproduction began in June, 1937, and prices dropped for the first time on September 1, 1937. Subsequent reductions were posted on October 12, 1937; December 1, 1937; March 7, 1938; June 13, 1938, and September 1, 1938. Bradford prices dropped from $2.82 to $1.68; Middle District from $2.77-82 to $1.56-61; Southwest Pennsylvania from $2.57 to $1.34; Southeast Ohio from $2.37 to $1.18 and West Virginia from $2.52 to $1.28.

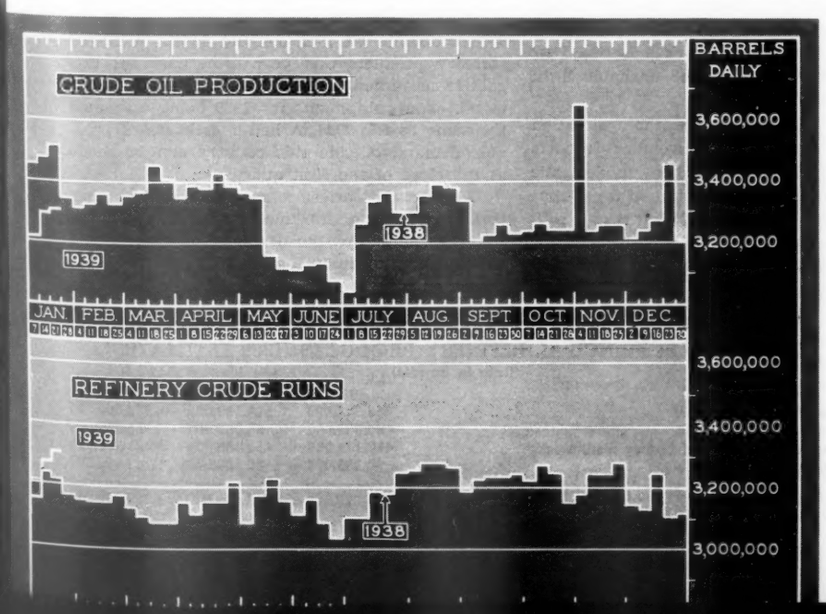
Demand for Pennsylvania Grade crude began to rise last August, after sinking to 63,900 bbls. daily in July. From that low it advanced steadily until it reached 73,900 bbls. in December. In the meantime production continued to drop. With demand exceeding output 4,500 bbls. daily, substantial withdrawals were made from storage. The first concrete evidence of the improved position of Pennsylvania Grade crude was witnessed December 1, 1938, when restrictions on production in the Bradford field, in effect since April 1, were lightened by several of the leading purchasers. Four refinery buyers lifted curtailment entirely January 1, and others followed January 16. Then curtailment in West Virginia, in effect since October, was lifted.

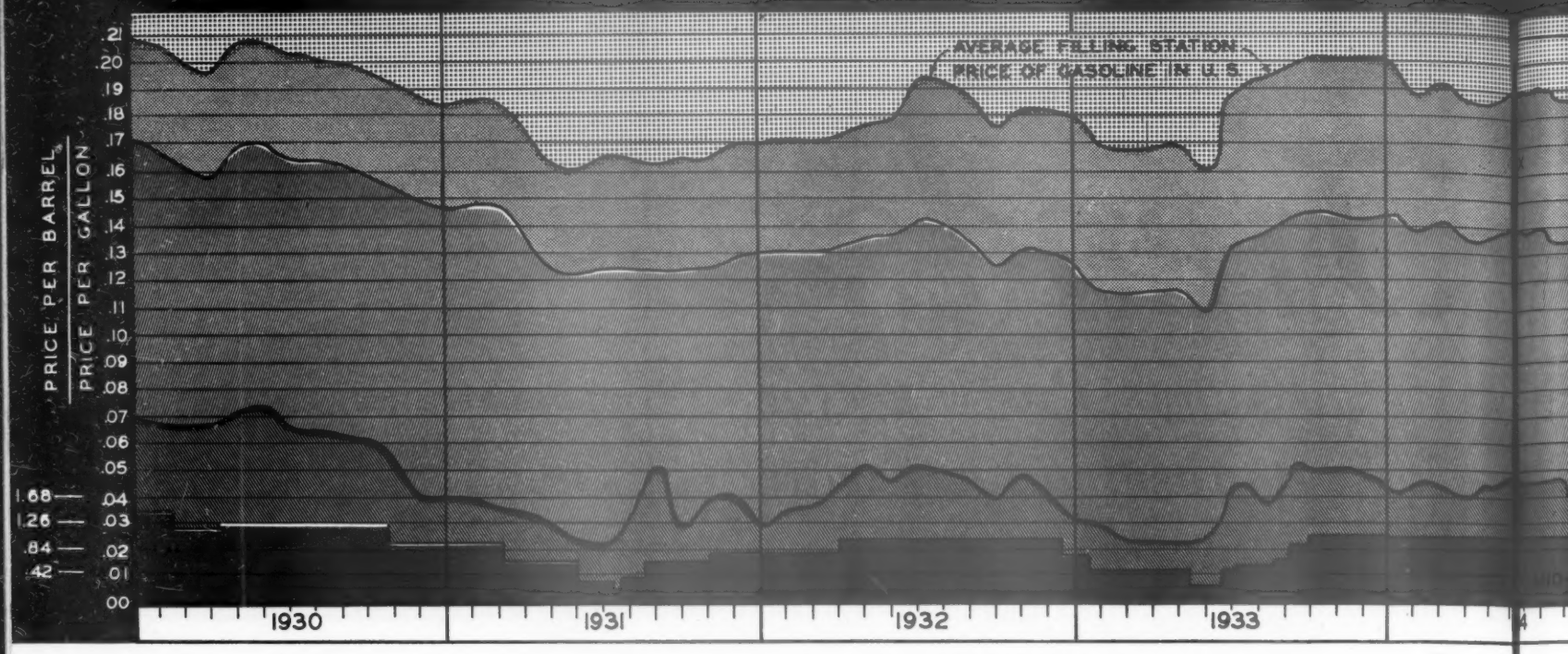
The nation's daily average production in the week ending January 21 rose 23,646 bbls. Increases and decreases, small and scattered, were without important significance, unless the drop of 5,440 bbls. in North Louisiana may be regarded as indication that this sore spot in the crude market is beginning to heal. Louisiana's production, which has threatened to upset attempts in other states to effect a balance with requirements, was still 18,370 bbls. higher than the Bureau of Mines estimate of demand and 8,930 above the state-fixed allowable. Illinois' production passed 140,000 bbls. daily for the first time.

A slightly stronger tone pervaded the gasoline market in the Mid-Continent and midwestern areas, resulting in part from the closing of several refineries to end operating losses. Stocks are in better position than last year. Abnormally low prices persist. Heating oils, inactive because of unseasonably mild temperatures, are causing anxiety in interior territory.

DAILY AVERAGE PRODUCTION FOR WEEK

	Jan. 21, 1939	Bur. Mines est. of demand	Jan. state allowable	Jan. 14, 1939
Oklahoma City	103,525	.....	.....	95,600
Fitts	32,225	.....	.....	31,475
Remainder of state	291,175	.....	.....	293,875
Total Oklahoma	426,925	499,700	428,000	420,950
East Texas	372,198	.....	.....	372,000
West Texas	205,099	.....	.....	203,600
North Central Texas	109,650	.....	.....	109,695
Texas Panhandle	65,543	.....	.....	55,850
East Central Texas	91,298	.....	.....	91,350
Gulf Coast Texas	343,100	.....	.....	340,100
Southwest Texas	103,356	.....	.....	102,695
Total Texas	1,290,244	1,332,900	1,319,542	1,275,290
North Louisiana	69,020	.....	.....	74,460
Gulf Coast Louisiana	191,250	.....	.....	192,000
Total Louisiana	260,270	241,900	251,340	266,460
California	632,750	588,400	600,000	628,400
Kansas	155,200	153,900	153,900	152,300
Arkansas	50,835	49,000	.....	50,945
Eastern fields	94,500	92,900	.....	94,200
Illinois	140,075	86,100	.....	139,794
Michigan	50,982	47,400	.....	51,816
New Mexico	100,820	95,800	95,800	100,740
Rocky Mountain area	68,090	82,600	.....	66,150
Total United States	3,270,691	3,270,600	.....	3,247,045





Relationship between posted field price of Mid-Continent crude and average regular-

Favorable Factors

With several countries establishing new yearly records, world crude oil production in 1938 totaled 1,983,090,000 bbls. or 5,433,123 bbls. daily. The total was the second largest in history, being exceeded only by the record-breaking year of 1937.

The production in the United States totaled 1,200,883,000 bbls. or 3,290,000 bbls. daily. This compares with the figure of 1,264,117,000 bbls. for 1937 or 3,463,324 bbls. daily. This decline was brought about partially by a desire to reduce crude oil stocks in the United States. These reductions for the year totaled about 33,000,000 or approximately 95,000 bbls. daily.

Outside the United States the general trend was to expand production and several countries established new peaks. Countries which produced more crude oil than ever before included Canada, Colombia, Ecuador, Venezuela, Trinidad, Albania, Germany, U.S.S.R., Bahrein Island, Iraq and Netherlands East Indies. The gains in Venezuela, Colombia and the U.S.S.R. were particularly outstanding. The increases were due largely to the greater output of old fields, although several new pools came on production for the first time in 1938.

Data as to the total demand for 1938 and the projections being made as to requirements for 1939 do not differ materially from the estimates reported in this publication at the end of the year. In regard to the 1938 demand it is still necessary to estimate December, as the Bureau of Mines report for that month will not be available until next month.

Due to the favorable situation revealed by November reports which showed a gain in domestic shipments of gasoline of 5 per cent over November, 1937, it is now estimated that the total demand for gasoline in 1938 totaled 567,500,000 bbls., of which 520,000,000 bbls. represented domestic consumption and the remainder exports. The domestic consumption was practically the same as in 1937 with a 24 per cent increase in exports, so that the increase in total demand was approximately 2 per cent over the previous twelve months.

Motor Car Registrations

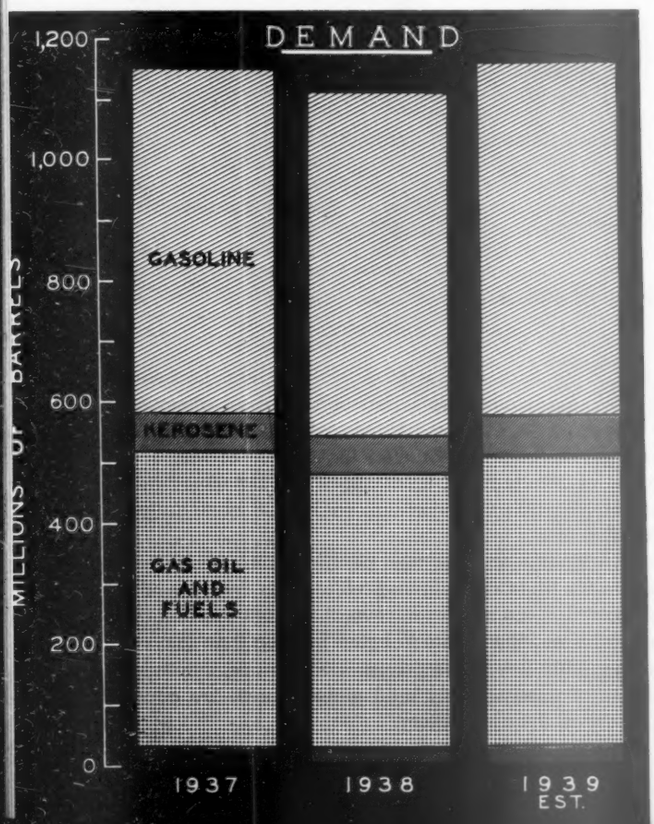
In regard to 1939 if the conservative estimates of car manufacturers materialize, there will be an average of 1,000,000 more motor vehicles on the highways and streets in the United States during 1939 than in 1938. This points to an increase of 16,000,000 bbls. in domestic gasoline outlets this year. In projecting the 1939 total demand, exports were left at the 1938 levels, resulting in a figure of 583,000,000 bbls. for total demand.

It is believed that industrial recovery will bring a substantial gain over 1938 in the demand for fuel oil and gas oil although not as large as in 1937. It is estimated that this demand in 1939 will total 480,000,000 bbls. Smaller gains of 3 per cent in the case of kerosene and 5 per cent for lubricating oils are projected for 1939.

These figures point to an increase of 47,000,000 bbls. in the total demand for the principal refinery products this year over 1938. All this gain is accounted for by increase in domestic demand, export shipments for 1939 being estimated the same as for 1938. A better estimate of probable demand outside this country can be made at the close of the first quarter.

The fact that prices to consumers on most petroleum products are lower than they were a year ago, is one of the developments which will aid consumption in 1939 although undesired from the standpoint of profits. The decline in heavy

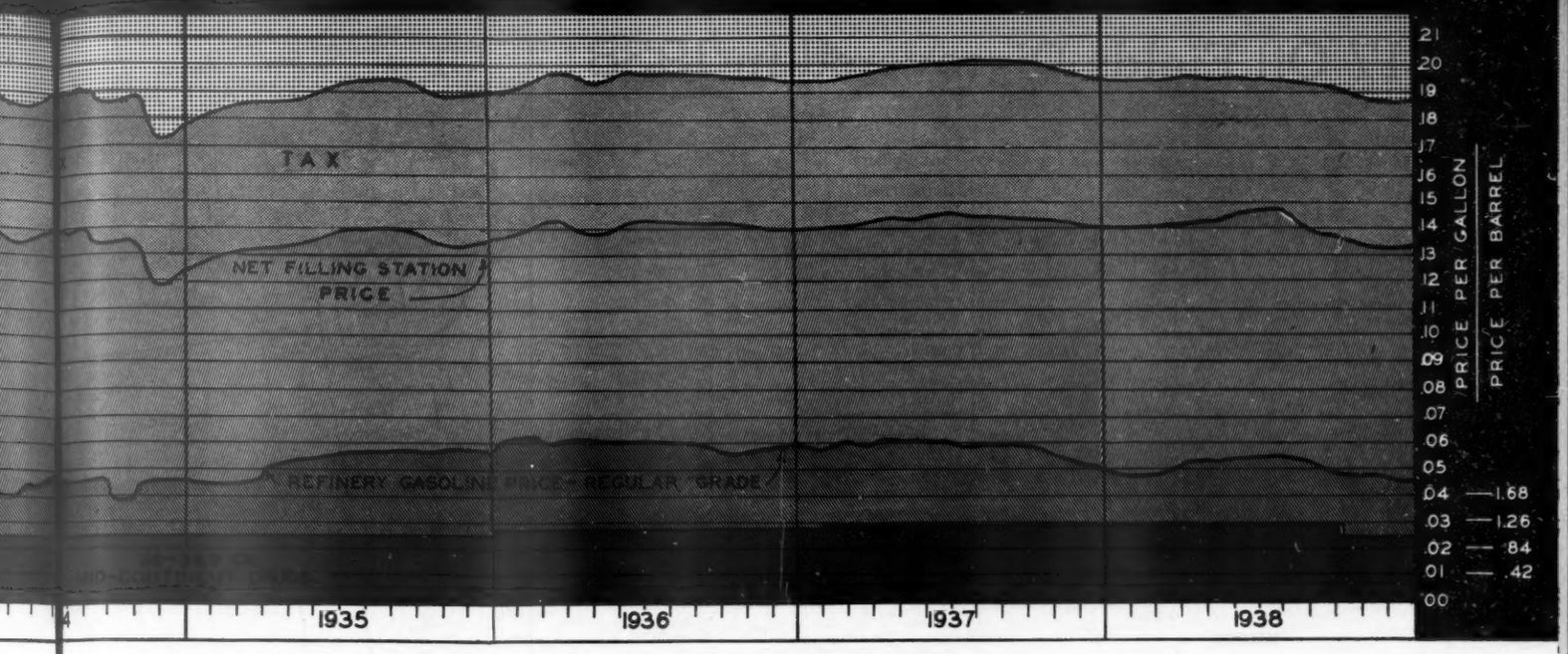
Estimated 1939 demand for four important refinery products compared with actual for 1938 and 1937



DEMAND FOR PRINCIPAL REFINERY PRODUCTS (1939 ESTIMATED)

(Data in barrels)

Product—	1937	1938	1939
Gasoline	558,734,000	566,198,000	583,000,000
Kerosene	63,858,000	63,000,000	65,000,000
Gas oil, fuel oil and burner distillates	487,142,000	453,000,000	480,000,000
Lubricants	34,295,000	30,500,000	32,000,000
Total	1,145,029,000	1,112,698,000	1,160,000,000



grade, gasoline refinery and station prices. Data are plotted over a nine-year period

in Record of 1938

residual oils, which are usually sold in competition to coal and other cheap fuels, is particularly noteworthy. These heavy fuel oil prices advanced steadily starting in 1935 and extending through most of 1937. The advances brought complaints from industrial and marine consumers and there was some shifting back to coal and other fuels. These prices have generally decreased 20 or more cents per barrel from the 1937 highs and once more occupy a strong competitive position.

Information covering the first 11 months indicates that the total demand for all oils, which includes a small quantity of benzol, totaled 1,320,000,000 bbls. in 1938, a decrease of 1½ per cent compared to the 1937 record of 1,340,801,000 bbls. The expected increases in consumption of refinery products this year will mean that the all oil figures for both 1937 and 1938 will be exceeded in 1939.

Stocks

In regard to inventories, 1938 ended with about the same stocks of all oils that it started with. Stocks of refinable crude were reduced approximately 33,000,000 bbls. but this decline was offset by a gain in stocks of refinery products including a new classification of heavy crude in California for which there is no comparable 1937 figure.

The bulk of the increase in refinery products was in the heavy residual oils. Gasoline stocks were less at the close of the year than at the start and gains in kerosene, gas oil and distillate and lubricating oils totaled less than 7,500,000 bbls. California accounts for practically all the gains in heavy oils, and a large part of the increase in gas oil and distillate. This was due in part to a reduced demand for the heavy oils from the Orient.

Stocks of crude oil at the end of the year totaled approximately 271,000,000 bbls. and were the lowest since 1922. Based on days' supply the crude stocks were less than half what they were a few years ago.

Pennsylvania Grade crude oil prices declined more than those of any other area in 1938, the average daily price for crude in National Transit Lines being $1.89 per barrel, which compares with $2.64 for 1937. The posted prices for Pennsylvania Grade crudes starting, September 1, 1937, were reduced six times within one year, the decreases totaling more than $1 per barrel. The reductions in Mid-Continent and Gulf Coast crudes did not become effective until October so that the average price of $1.19 per barrel for 36° gravity oil was only 2 cents per barrel under the 1937 average.

In refinery products the heavy fuel oils suffered more than any other product in 1938. Bunker C fuel oil at Atlantic seaboard points dropped from $1.25 to 95 cents per barrel during the year. Heavy oil prices at the Gulf Coast also decreased 25 to 30 cents per barrel. In California, 27 plus Diesel oils dropped from $1.50 per barrel to $1 per barrel.

Decreases in gasoline, kerosene, distillate, and gas oil quotations were general throughout the United States last year compared to 1937. The decreases in Pennsylvania Grade neutral oils and bright stocks ranged from 40 to 60 per cent during the year with the market showing signs of recovery in December. Wax prices were lower than in 1937 or 1936.

The average retail price of regular-grade gasoline in 50 representative cities in the United States in 1938 was 13.91 cents per gallon exclusive of state, city, and federal taxes, a decrease of .59 cent per gallon compared to 1937 and the lowest yearly average since 1935. With sales of domestic gasoline totaling 520,000,000 bbls., this decline of .59 cents per gallon points to a decrease of approximately $130,000,000 in revenue to the industry in its gasoline sales last year. Since the decline in export prices was at least as large in the domestic market another $12,000,000 to $15,000,000 can be added.

(Continued on Page 56)

1938 in Review

Crude oil production in United States was 95 per cent of 1937 record and foreign production established new peak.

Total demand for all oils better than 98 per cent of yearly record.

Oil exports were the largest in history.

Domestic gasoline demand at new high with 24 per cent gain in exports.

1939 in Prospect

Domestic crude oil production will exceed that of 1938.

Business recovery will insure enlarged demand for heavy oils and industrial lubricants.

Record demand for burning oils and furnace oils.

Domestic gasoline shipments will be 3 to 4 per cent larger than in 1938.

217 Oil Fields Discovered in 1938

ARKANSAS

Field—	County
(1) Magnolia	Columbia
(2) Village	Columbia
(3) Atlanta	Columbia

CALIFORNIA

(1) Aliso Canyon	Los Angeles
(2) Canfield Ranch	Kern
(3) Coles Levee	Kern
(4) Tupman	Kern
(5) Coalinga Eocene	Fresno
(6) Wasco	Kern

ILLINOIS

(1) Clay City (townsite)	Clay
(2) North Flora	Clay
(3) Olney	Richland
(4) Salem	Marion
(5) North Aden	Wayne
(6) Aden	Wayne
(7) Dix	Marion
(8) West Clay City	Clay
(9) Boyleston	Wayne
(10) Sandoval	Marion
(11) Wicklund	Richland
(12) Schnell	Richland
(13) St. James	Fayette

INDIANA

(1) Heusler	Posey
(2)	Gibson

KANSAS

(1) Nunn	Finney
(2) Morel	Graham
(3) Fike	Rooks
(4) Richards	Ellis
(5) South Burnett	Ellis
(6) Blue Hill-Wilcox	Ellis
(7) Cities Service	Ellis
(8) Smoky Hill	Russell
(9) Greenvale	Russell
(10) Foster	Russell
(11) North Balta	Russell
(12) East Big Creek	Russell
(13) South Letsch	Russell
(14) Michel-Topeka	Russell
(15) Schneider	Russell
(16) W. I. Southern	Russell
(17) Jones-Shelburne	Russell
(18) Hoisington	Barton
(19) West Ellinwood	Barton
(20) Odin	Barton
(21) Wolf	Barton
(22) Prusa	Barton
(23) Hagan	Barton
(24) Virginia Drilling Co.	Barton
(25) Bonham	Stafford
(26) Leesburgh	Stafford
(27) Fischer	Stafford
(28) South Sittner	Stafford
(29) South Snider	Stafford
(30) Max	Stafford
(31) Rattlesnake	Stafford
(32) Lake City	Barber
(33) Schroeder	Ellsworth
(34) Sterling	Rice
(35) Heinz-Lansing	Rice
(36) Heinz-Arbuckle	Rice
(37) West Wenke	Rice
(38) Reno	Rice
(39) Buehler	Rice
(40) Shepherd	Kingman
(41) Linsborg	McPherson
(42) Roxbury	McPherson
(43) Hesston	Harvey
(44) North Eastborough	Sedgwick
(45) Wilson	Cowley
(46) Dunbar	Cowley

KENTUCKY

(1) Birk City	Henderson-Daviess
(2) Spottsville	Henderson

NORTH LOUISIANA

Field—	Parish
(1) Cotton Valley	Webster
(2) Shreveport	Caddo
(3) Blue Lake	Sabine

SOUTH LOUISIANA

(1) Bancroft	Beauregard
(2) Bay Baptiste	Terrebonne
(3) Bayou Delarge	Terrebonne
(4) Bird Island	Plaquemines
(5) Chacahoula	La Fourche
(6) Chalkley	Cameron
(7) Convent	St. James
(8) Creole	Cameron
(9) Golden Meadows	La Fourche
(10) Jefferson Island	Iberia
(11) North Tepetate	Acadia
(12) Raceland	La Fourche
(13) South Houma	Terrebonne
(14) Timbalier Bay	La Fourche
(15) University	East Baton Rouge
(16) West Gueydan	Vermilion
(17) West Lake Verret	St. Martin
(18) Woodlawn	Jefferson Davis

MICHIGAN

(1) Edenville	Midland
(2) Monterey	Allegan
(3) Dorr	Allegan
(4) Overisel	Allegan
(5) Freeman-Redding	Clare
(6) Stewart	Allegan
(7) Bloomingdale	Van Buren

MONTANA

(1) North Cut Bank	Glacier

OKLAHOMA

Field—	County
(1) West Konawa	Seminole
(2) Hazel	Seminole
(3) South Hazel	Seminole
(4) East Hazel	Seminole
(5) Swan	Seminole
(6) Mathis	Seminole
(7) West Little River	Seminole
(8) Tyrola	Seminole
(9) Ramsey	Payne
(10) Okfuskee	Okfuskee
(11) Lehmar	Okfuskee
(12) Waukomis	Garfield
(13) Clark	Garvin
(14) Freame	Hughes
(15) Coyle	Payne
(16) Noble	Cleveland
(17) Meridian	Logan
(18) Southeast Braman	Kay
(19) Coline	Stephens
(20) Vanek	Oklahoma
(21) Avoca	Pottawatomie
(22) North Cromwell	Okfuskee
(23) Morris	Hughes
(24) Hillsdale	Garfield
(25) Lease	Okfuskee
(26) Leverett	Creek

TEXAS

East Texas

(1) Parsons	Anderson
(2) Navarro Crossing	Houston
(3) Bradley	Smith
(4) Bane	Leon
(5) East Texas Extension	

North Texas

(6) Hull-Silk	Archer
(7) Canyon	Archer
(8) Walnut Bend	Cooke
(9) Myers	Jack
(10) Castlebury	Wilbarger
(11) Phillips and King	Clay
(12) Bryson	Jack

North Central Texas

(13) Ivy (deep)	Shackelford
(14) Oplin	Callahan
(15) Pardue	Haskell
(16) Chittenden	Jones
(17) Williams	Stephens
(18) Dean	Young
(19) Steffens	Jones
(20) Andrews	Young
(21) Hamby	Jones
(22) Sewell	Young
(23) McKnight	Young
(24) Noodle Creek	Jones
(25) Pritchard	Jones
(26) Wray	Young
(27) Nail Ranch	Shackelford
(28) Avoca townsite	Jones
(29) Carlisle	Stonewall
(30) Stewart	Young

West Texas

(31) Crockett	Crockett
(32) Shearer	Pecos
(33) Bayton	Pecos-Ward
(34) Dunes	Crane
(35) Frick-Osage	Gaines
(36) Holt	Andrews
(37) Emma	Andrews
(38) West Ira	Scurry
(39) Swenson	Garza

Texas Panhandle

(40) Pampa extension	Gray

Gulf Coast (Lower District)

(41) Alfred	Jim Wells
(42) Bandera	Jim Wells
(43) East White Point	San Patricio
(44) La Rosa	Nueces
(45) North Agua Dulce	Nueces
(46) North Normanna	Bee
(47) Sareo Creek	Goliad
(48) South and East Alice	Nueces
(49) Tulsita	Bee
(50) Turkey Creek	Nueces
(51) Westlaco	Hidalgo
(51-A) Laguna Madre	Kleberg

Gulf Coast (Upper District)

(52) Armour	Matagorda
(53) Cedar Point	Chambers
(54) Clear Lake	Harris
(55) Cordole	Jackson
(56) Eureka	Harris
(57) Fairbanks	Harris
(58) Francitas	Jackson
(59) League City	Galveston
(60) Lovell's Lake	Jefferson
(61) North Markham	Matagorda
(62) South Anahuac	Chambers
(63) West Conroe	Montgomery
(64) West Ranch	Jackson
(64-A) Cedar Point	Galveston

Southwest Texas

(65) Casa Blanca	Duval
(66) Cedro Hill	Duval
(67) Campana	McMullen
(68) Christman	Burleson
(69) Dunlay	Medina
(70) Fitzsimmons	Duval
(71) Kelsey	Jim Hogg
(72) La Coste	Bexar
(73) La Reforma	Starr
(74) Longhorn	Duval
(75) Los Plachos	Duval

Field—	County
(76) Mitchell Lake	Bexar
(77) Munson	McMullen
(78) Riddle	Bastrop
(79) Rincon	Starr
(80) San Jose	McMullen
(81) Schaffel	Frio
(82) Spiller	Guadalupe
(83) Sun	Starr
(84) Tesora	Duval
(85) Walnut Creek	Caldwell
(86) North Killam	Webb

WYOMING

(1) Cole Creek	Natrona
(2) North Big Hollow	Albany

NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
MINNESOTA
IOWA
MISSOURI
WISCONSIN
ILLINOIS
ARKANSAS
TEXAS
New Fields Discovered in 1938

covering reduced revenue in sales to foreign customers.

Refinery Operations

From the standpoint of crude runs to stills, refinery operations in the United States in 1938 were within 1½ per cent of the peak year of 1937. Preliminary data reveal that the total runs to stills of foreign and domestic crudes, totaled 1,145,000,000 bbls. exceeding any other year with the exception of 1937. The increase in domestic consumption of gasoline and most of the other refinery products projected for 1939 indicate that this year will establish a new peak in raw material refined into finished products.

Average prices for all the principal refinery products for both domestic and export shipment were lower than in either 1937 or 1936 and with little change in posted crude oil schedules until late in the year—except for Pennsylvania Grades—the margin left for refining, represented losses for many operators in all parts of the country.

Operating Margin

An analysis of a typical refinery operation in Oklahoma over a period of years is one method of showing the comparative situation in regard to the margin accredited to refinery operations last year. The following table shows the average price of 36° gravity crude oil at the wells, the refinery revenue and the net margin between the two:

	1938	1937	1936	1935	1934
Refinery revenue	$1.602	$1.867	$1.827	$1.572	$1.422
Crude price	1.19	1.21	1.10	1.00	1.00
Operating margin*	.412	.657	.727	.572	.422

*Includes pipe line transportation from fields to refinery and manufacturing.

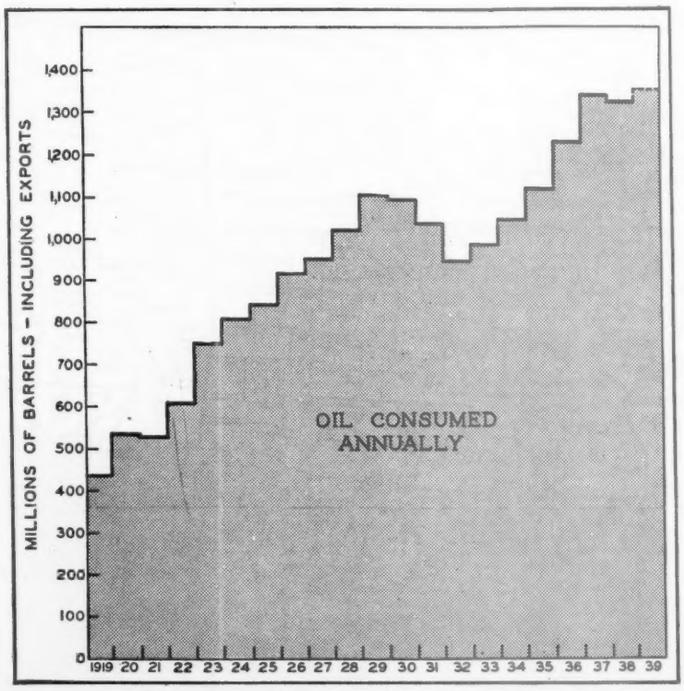
The refinery revenue is based on yields per barrel of 25 gallons of regular grade gasoline; 2.5 gallons of 41-43 kerosene; 5 gallons of gas oil and distillate, and 8 gallons of residual fuel oil. The remaining 1½ gallons represents gas and loss. Prices used in arriving at the refinery revenue were the average weekly quotations for the five years published elsewhere in this issue.

This table shows a substantial decline in refinery revenue per barrel during 1938 of crude refined in an average skimming and cracking operation in Oklahoma with the result that the net margin of 41.2 cents, was 24.5 cents per barrel less than in 1937 and 31.5 cents less than in 1936. The 1938 margin was practically the same as in the unsatisfactory year of 1934 when refining costs were not as large as they were last year.

It may be contended that market conditions in Oklahoma were particularly bad in 1938 so that the situation of refiners in that state was not representative of the entire United States. A check will show that the decline in tankcar and tanker prices in other refining areas for both export and domestic movement followed the same general trend as those in Oklahoma which reflects Mid-Continent conditions directly. The only important exception was California where gasoline prices based on contracts were maintained more in line with 1937 levels.

Assuming that the Oklahoma situation was representative of the entire country, it is apparent that refinery margins in 1938 declined approximately $275,000,000 compared to 1937 and approximately $350,000,000 compared to 1936. These comparisons are based on open market quotations and do not take into consideration that some refiners sell part of their products on long-time contracts. These contracts, in a year of declining prices as in 1938, generally result in higher revenue per barrel than when sales are made on open market quotations. There are also, in many cases, partially offsetting factors due to advantages in transportation and refinery costs. These situations however do not nullify the truth of the statement that considered strictly from the standpoint of refinery profits, 1938 was one of the most unsatisfactory periods in several years.

Crude costs in many areas are now from 12 to 18 cents per barrel under the 1938 average due to the reductions which were made effective last October. While prices on most refinery products are now lower than the average of last year, the reduced crude costs have served to widen the refinery margin and to that extent the refinery situation has improved over 1938.



Trend of oil consumption in the United States over period of past 20 years together with estimate for 1939

Proven Reserves in the United States by States

	Jan. 1, 1938†	Jan. 1, 1939*	Changes increase (+) decrease (—)
California	2,989,819,655	2,909,260,655	— 80,559,000
Rocky Mountain:			
Wyoming	311,726,178	303,795,178	— 7,931,000
Montana	52,114,747	47,769,747	— 7,345,000
Colorado	19,753,307	24,429,307	+ 4,676,000
Central and Southern States:			
New Mexico	623,440,148	656,831,148	+ 33,391,000
Texas	6,867,887,421	7,234,124,421	+366,246,000
Oklahoma	952,430,633	838,232,633	—114,198,000
Kansas	636,233,632	697,289,632	+ 61,056,000
Arkansas	79,882,986	138,838,486	+ 58,955,000
North Louisiana	170,926,561	196,885,561	+ 25,959,000
Coastal Louisiana	424,501,495	463,608,495	+ 39,107,000
Eastern States:			
Illinois	38,834,000	214,470,000	+175,636,000
Indiana	3,119,800	3,241,800	+ 122,000
Kentucky	30,579,000	30,006,000	— 573,000
Michigan	42,672,281	40,645,134	— 2,027,147
New York	25,668,500	20,574,500	— 5,094,000
Ohio	18,492,100	15,168,100	— 3,324,000
Pennsylvania	187,986,500	170,303,500	— 17,683,000
West Virginia	13,398,000	9,618,000	— 3,780,000
Total	13,489,457,944	14,015,092,297	+525,634,353

***Includes 1938 discoveries and revisions due to extensions of new sands in areas discovered previous to January 1, 1938. †Published in The Oil and Gas Journal, January 27, 1938.**

Tanker Construction

Sixteen tank ships with aggregate capacity of 234,300 gross tons were completed during 1938, and an equal number aggregating 176,600 gross tons were on the ways of various United States yards at the start of the current year.

Since 1936 tanker construction has dominated shipbuilding activity, and this year is no exception. The 16 tankers under construction as of January 1, 1939, represent 29.2 per cent of the total merchant ship construction in the United States. Tanker construction during the past three years has been primarily for the account of privately owned companies, partially for replacement of obsolete bottoms and for expansion of water transportation facilities.

Tank ships currently under construction are dominated by the 12 vessels being built through collaboration of the Standard Oil Co. of New Jersey and the Maritime Commission. Early in 1938 Standard of New Jersey, under special arrangement with the Maritime Commission and the Navy Department, contracted for 12 tankers, each capable of 18 knots. Construction contracts were divided between four private shipyards, including Sun Shipbuilding & Dry Dock Co., Federal Shipbuilding & Dry Dock Co., Bethlehem Shipbuilding Corp., and Newport News Shipbuilding & Dry Dock Co.

Four of the superspeed tankers originally ordered by Standard have been transferred to other ownership while in process of building. Two of the vessels have been sold to another private oil company and two to the Navy Department, with the likelihood that additional units of the group will be acquired by the Government or private concerns before completion. Maritime and Navy participation in construction of the 12 tankers originally ordered by the Standard of New Jersey was justified by the naval features incorporated in design.

The 12 superspeed tankers are being built at a

total cost of about $70,000,000, of which $16,000,000 is being supplied by the Government. Since expansion of the naval forces of the United States will require numbers of tankers of this type there is reason to believe that provisions will be made for the construction of many more such units, either directly by the Navy Department or through the Maritime Commission in collaboration with private operators.

New tankers launched during the past three years and due to be placed in service in 1939 are expected to meet temporarily the oil industry's water transportation requirements. The program of replacing obsolete equipment and that lost in the natural hazards of operation doubtless will continue tanker construction at a reasonably high percentage of the total shipbuilding for an indefinite period. The modern tankers with higher speeds permit material savings in personnel, operating schedules, and in efficiency.

Exports at New High

Exports of 177,785,000 bbls. of crude oil and refined petroleum products during the first 11 months of 1938, a daily average of 532,290 bbls., tells briefly a story that has not been equaled in the history of the industry.

There were 3.644 bbls. of crude and products shipped from ports of this country last year for each barrel received from foreign lands, including petroleum received in bond for further processing or for bunkering of marine vessels. In 1937, which set a recent record in petroleum exports, the relation of exports to imports was 3.109 bbls. to one. As recently as 1936 the ratio was 2.30 to 1.

Crude oil exports increased 10,271,000 to a total of 72,389,000 bbls., a gain of 16.5 per cent over 1937 and shipments established an all-time record.

Refined product exports increased from 98,529,000 bbls. in 1937 to 105,396,000 bbls. in 1938, an advance of 6.9 per cent. Shipments of refined products were exceeded in 1929 when 126,195,000 bbls. were exported.

Combined exports of crude oil and refined products totaled 177,785,000 bbls., topping 1937 by 17,138,000 bbls., or 10.6 per cent and setting a figure not previously reached in the oil industry's history.

Motor fuel exports rose 8,911,000 bbls. to 44,775,000 bbls., an increase of 24.8 per cent over 1937.

Residual fuel oil exports advanced 1,668,000 bbls. to 15,991,000 bbls., a gain of 11.6 per cent.

Kerosene shipments dipped 1,513,000 bbls. to 6,710,000 bbls., a loss of 18.4 per cent.

Lubricating oil exports fell 1,412,000 bbls., a decline of 13.9 per cent. Wax shipments were lower by 14.3 per cent.

Gas oil and distillate fuel exports declined 618,0000 bbls., off 2.2 per cent.

A rather drastic change in the character of petroleum imports took place during 1938. A sharp constriction is apparent in the imports of refinery products for domestic consumption with an almost corresponding increase in materials discharged at U. S. ports under bond. In fact the petroleum imports during the first 11 months of 1938 upon which duty was paid, thus marking it for domestic consumption, totaled 27,097,000 bbls., a daily average of about 81,130 bbls. As in the past, crude oil made up the big bulk of U. S. imports. In the breakdown of imports for domestic consumption 20,345,000 bbls. consisted of crude and only 6,752,000 bbls. were refined products. Approximately 40 per cent of the domestic refined imports were residual fuel oils.

There was a sharp gain last year in the receipts of crude oil in bond, reflecting the importation of about 10,000 to 15,000 bbls. of Mexican crude daily at Houston during the last three or four months of the year. There was a decline of 1,540,000 bbls. in the crude imports of all classes in the first 11 months of 1938, a reduction of 6 per cent. Receipts for domestic consumption dwindled by 2,973,000 bbls., a loss of 12.7 per cent while crude brought in under bond increased 1,433,000 bbls., a gain of 80 per cent over 1937.

Imports of refined products totaled 25,230,000 bbls. for the first 11 months of last year showing a loss of 2,228,000 bbls. compared with the same period in 1937, a reduction of 8.8 per cent. Receipts in bond increased 7,873,000 bbls. to total 18,478,000 bbls., a gain of 42 per cent, but material discharged for domestic consumption dropped 10,101,000 bbls., a loss of almost 60 per cent.

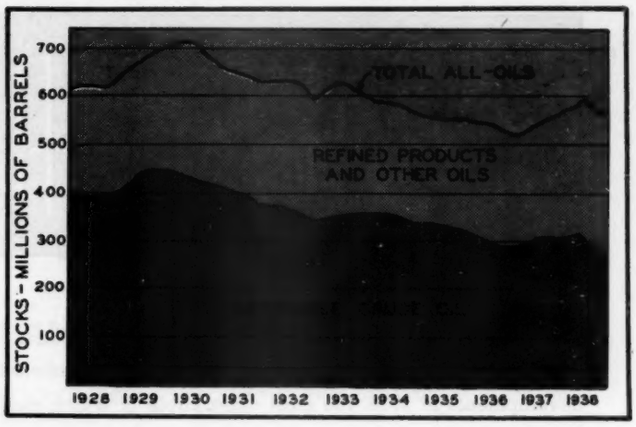
Complete 1938 figures on petroleum imports compiled from reports of the American Petroleum Institute reveal that North Atlantic Coast ports continued as the chief recipients of foreign crude and products. North Atlantic ports received more than 90 per cent of all petroleum imports and less than 9 per cent went to Gulf Coast terminals. Without distinguishing between imports for domestic consumption and in bond, the A.P.I. records show 1938 receipts of foreign produced or refined petroleum totaled 52,243,000 bbls., a decline of more than 6 per cent compared to 1937. Crude oil made up 26,843,000 bbls. of the imports and fuel oil accounted for 24,300,000 bbls. of the total. Material listed as "other petroleum products" consisted chiefly of solvents and asphalt cut-backs. Crude oil receipts declined about 840,000 bbls., or approximately 3 per cent. Fuel oil receipts in both bond and for domestic consumption declined 2,074,000 bbls., the A.P.I. reports show, or by 9 per cent.

The influence of Mexican crude oil receipts at Houston is revealed by the fact that nearly 58 per cent of Gulf Coast imports occurred during the last five months of the year, reaching a high point of 548,000 bbls. in December.

Receipts at all principal ports, excepting Baltimore, declined by various margins. The increase at Baltimore amounted to 74,000 bbls. for the year. There was no gas oil received from abroad during the entire year, according to available data, but small amounts may have entered under the general classification of "fuel oil." Movement of California crude oil and refinery products to the Atlantic Coast in 1938 dropped 972,000 bbls. to total 4,796,000 bbls., a decline of 15 per cent. The drop would have been more precipitous but for a steep climb in intercoastal shipments of crude oil. Receipts of California crude at Atlantic ports last year totaled 624,000 bbls., an increase of 380 per cent. California gasoline shipments declined 1,316,000 bbls., to 2,588,000 bbls., a slump of 33.7 per cent; kerosene movement was off 29,000 bbls., or 6 per cent, and fuel oil traffic from west to east dipped 234,000 bbls., to 524,000 bbls., for the year, a decrease of 30.8 per cent.

It is difficult to project the 1939 exports due to unsettled political conditions in European countries which absorb the bulk of the crude oil exported from this country. Available information shows that there has been a steady increase in the consumption of most of the petroleum products outside this country over the past few years. Part of this gain has been due to war preparations, although the percentage gains have been greatest in several countries which use very little petroleum in their defense preparations.

Most South American countries are steadily increasing their consumption of petroleum products, and the outlook in those countries is favorable for this year. Increasing the sale of crude and products from the expropriated oil properties in Mexico will tend to reduce exports from the United States.



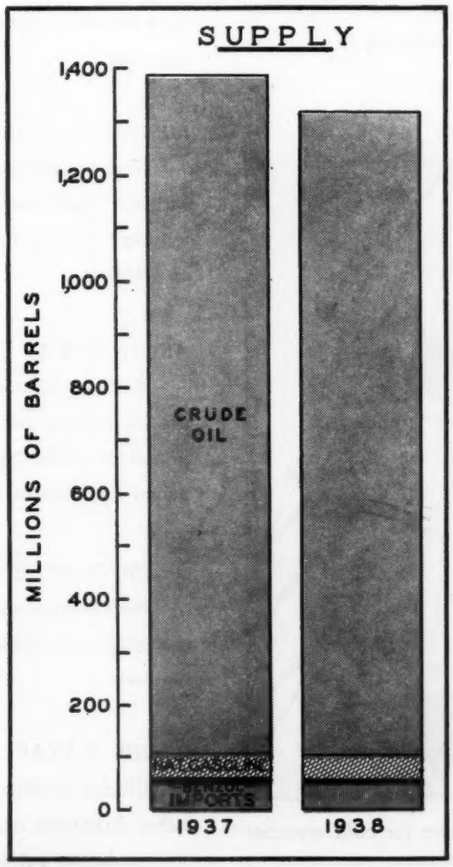
Stocks of crude oil end of 1938 were about 33,000,000 bbls. less than those at beginning of year and stocks of all oils were approximately the same

NEW OIL SUPPLY

(Data in barrels)

Source—	1937	1938
Crude oil	1,264,117,102	1,200,883,399
Natural gasoline	48,550,000	49,750,000
Benzol	2,786,000	1,694,000
Imports	57,152,000	53,700,000
Total	1,372,605,102	1,306,027,399

Supply of raw materials for manufacture of refinery products



SPARKS FROM THE NEWS

CONSUMPTION RECORDS

This week's Annual Number reveals many interesting developments in 1938, the most remarkable of which was the amazing oil consumption records of a bad business year.

TOO MUCH WATER

Sulfur water in the Sandoval field is dimming the prospects for important lime production in southern Illinois.

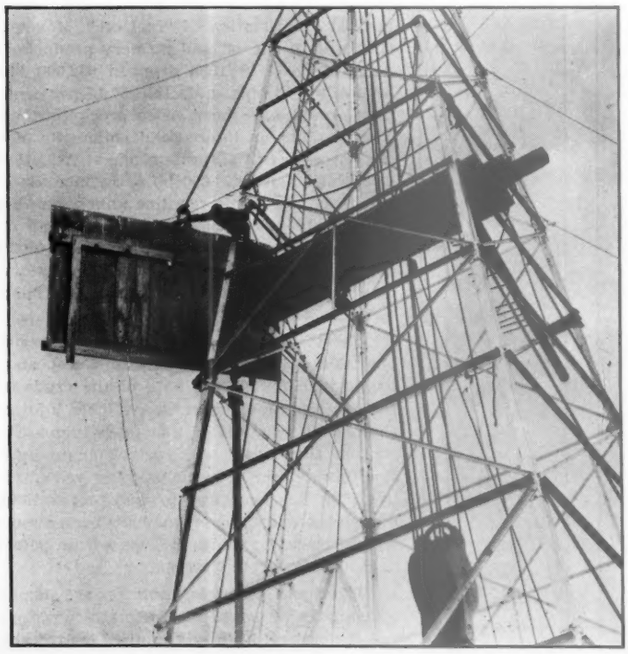
COASTAL DISCOVERY

A new discovery in Avoyelles Parish, Louisiana, adds greatly to the attractiveness of the Sparta-Wilcox play of South Texas and South Louisiana.

NOT SO NOVEL

Introduction of a 67-octane third-grade gasoline stirred excitement last month, but it now appears that some refiners had been making a 70-octane third grade and a 74-octane regular for a half-year with few persons noticing it.

BR-R-R!



Derrickman lands windbreak in preparation for cold weather in Zenith field, Kansas

MAJOR PROJECT

The 168 miles of loops from Illinois fields to Ohio refineries constitute the first major pipe line project of 1939.

MAJOR RETIREMENT

The sole refinery in East Texas operated by a major company closed down last week after eight years of continuous operation.

GASOLINE NEEDS

The B. of M. estimates that the domestic gasoline demand in February will be 5 per cent greater than in same month last year. Crude requirements will be less, due to increased gasoline yields and stock situation.

INFORMING THE YOUNG

The I.P.A.A. plan to educate high school students about the oil business will be watched with interest since the industry's efforts to inform their parents have not been particularly successful.

MENTAL ACTIVITY

The contention that activity in the Forest City basin is largely "psychological" will not be supported by land men who are leasing in remote sections of four states in all kinds of weather.

ANOTHER WAY

Refinery shutdowns in the southwest, a lamentable measure for ending unprofitable operation, may stiffen the market for oil products, but the same end could have been accomplished by general curtailment.

CHANGES IN REFINING

Recent announcements indicate that this year will be outstanding as regards major developments in refinery processing methods.

WITHIN A YEAR

Illinois production a year ago was less than half that of either Arkansas or Michigan. Now it's 40 per cent more than the combined output of those states.

Louisiana Sparta-Wilcox Well Extends Play East

By NEIL WILLIAMS

HOUSTON, Tex., Jan. 23.—The Sparta-Wilcox play, which has been spreading steadily across South Texas and South Louisiana in a trend closely paralleling on the north previous Gulf Coast development, received renewed incentive the past week with opening of production on the Eola prospect, southwestern Avoyelles Parish, Louisiana. The new field, the first for the latter parish, is regarded as one of the most important discoveries so far along the trend, extending the line of such fields eastward along this almost virgin strip of territory.

The discovery well is Sid Richardson No. 1 Haas Investment Co., Section 7-2s-3e, completed January 18, flowing on initial test at the rate of 180 bbls. of 43 gravity oil through an eighth-inch choke on 2½-inch tubing, with 1,650 pounds pressure on the tubing and 1,700 pounds on the casing. The well has been shut in for lack of storage.

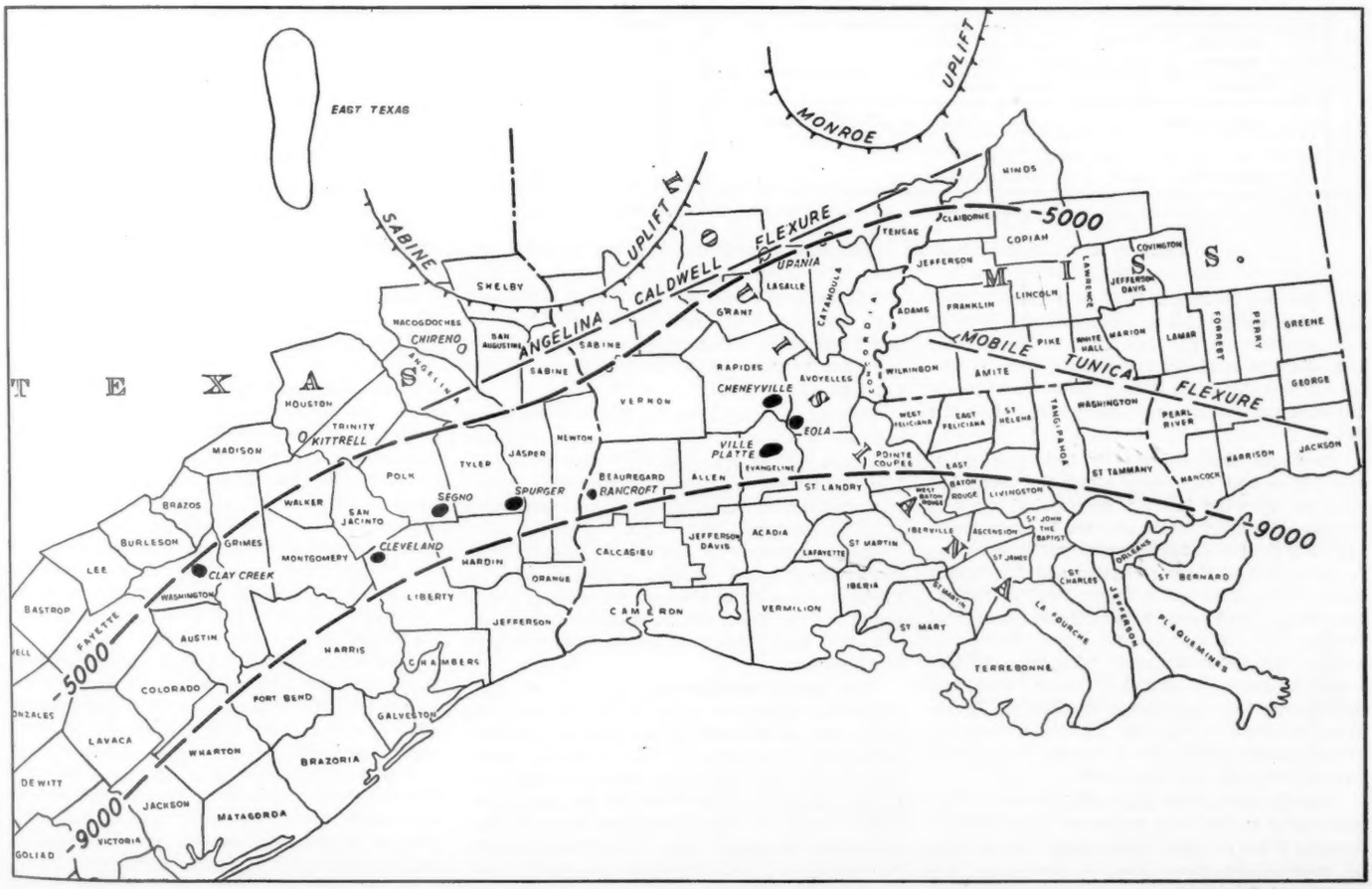
Production is from the Wilcox member of the lower Eocene, in which the well has 106 feet of almost solid sand from 8,442-8,548 feet. The hole was drilled through the sand to a total depth of 8,580 feet. No water was encountered, which leaves the way open for potential development down-dip in the more than 100 feet of sand. In completion 7-inch casing was set and cemented on bottom, perforated into the sand with 670 shots, the largest number in any previous well.

Above the Wilcox, sands also were logged in the Sparta, as well as in the Cockfield. In the Cockfield the well had about 25 feet of sand, of which the upper 12 feet showed some saturation. Approximately 30 feet of sand was cored in the Sparta. Although offering potentialities these horizons were passed in favor of a Wilcox test.

Possibilities from the Sparta-Wilcox series have been realized for many years, although it has been only in the last two years with the finding of such fields as Spurger (Joe's Lake), in Tyler County, Tex., and Villa Platte, Evangeling Parish, La., that the potentialities have received any general attention. Earlier production was generally small,

Discovery of the field is attributed largely to Dr. John D. Todd and Frank C. Roper, consulting geologists, who for five years have specialized in geology of the Louisiana Gulf Coast, and authorities on the Sparta-Wilcox trend. They have devoted considerable study to this particular area, and now are among the major acreage holders, which include Tide Water Associated Oil Co., Gulf Oil Corp., Amerada Petroleum Corp., Sun Oil Co., and Magnolia Petroleum Co. The block is supported by reflection shooting, as well as torsion balance work. First reflection shooting was done several years ago by Independent Exploration Co., which rechecked its work last August.

According to geophysical pictures, as well as other indications, the productive area will cover 5,000 acres or more. Early calculations based on sand thickness in the discovery well, permeability and porosty indicate a recovery of 80,000 bbls. per acre from the present Wilcox sand. This well ran about 200 feet higher than a Wilcox test drilled the past year by Magnolia Petroleum Co. on the Evergreen prospect, about 6 miles east, which at



Map by Todd and Roper

Approximate boundaries of Sparta-Wilcox trend play with fields in which Sparta or Wilcox production has been found

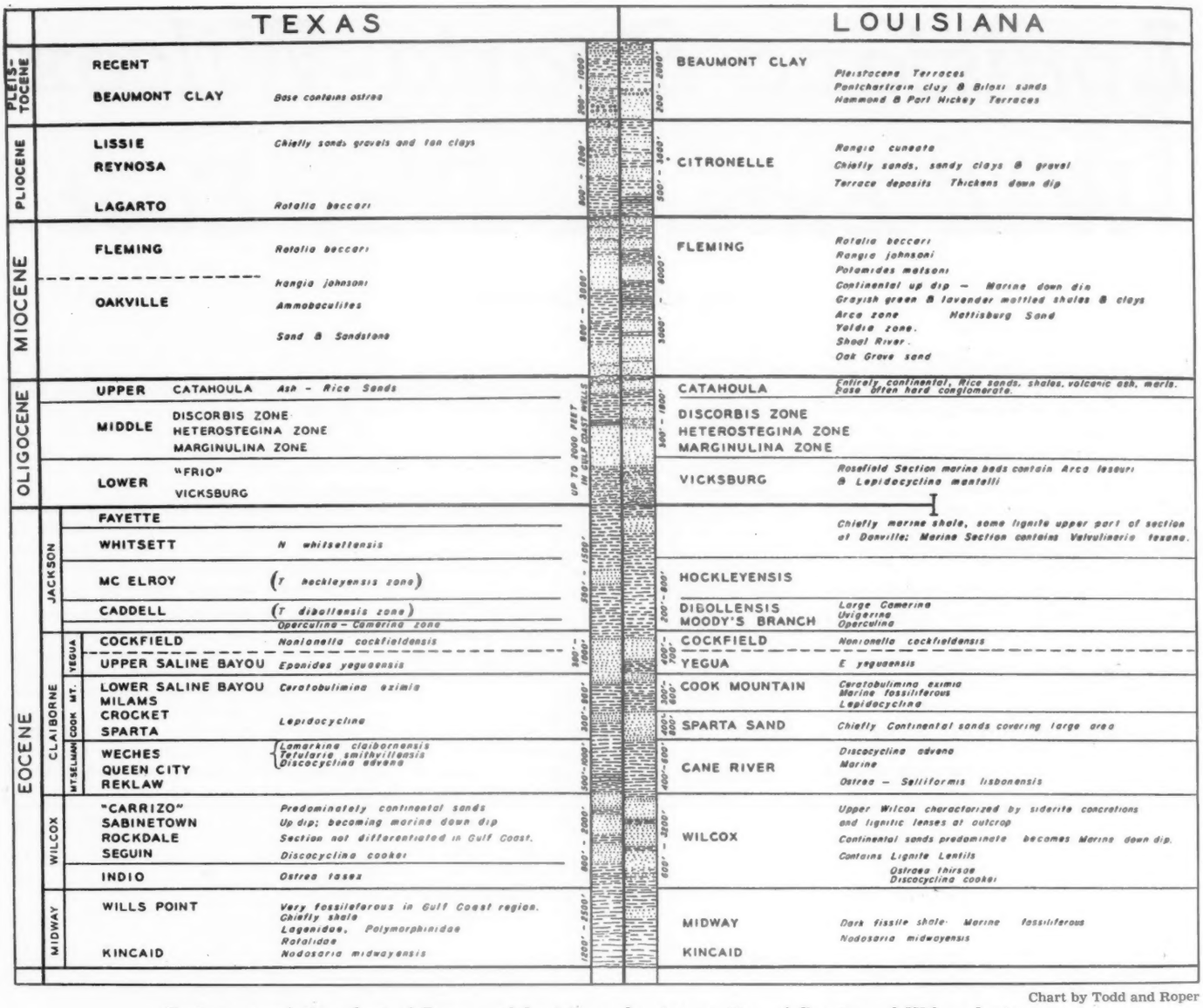


Chart by Todd and Roper

Tertiary correlation chart of Texas and Louisiana showing position of Sparta and Wilcox horizons

that time was thought to have been about 100 feet high structurally. This is interpreted as indicating a large closure for the Eola field. So far the Eola well and the Magnolia test are the only Wilcox tests drilled along this Wilcox trend. Previous exploration and development having been only to the Sparta.

Until comparatively recently, little geophysical exploration had been done along the trend but with the growing interest, geophysical work is increasing rapidly. There now are 17 crews working along the trend, including two reflection crews in Allen Parish; three reflection and one torsion crew in Avoyelles and adjacent Rapides Parish; four reflection and one El-tran crew in Beauregard Parish; one torsion balance crew, Evangeline Parish; one reflection crew, Livingston Parish; two reflection crews in Point Coupee Parish, and one torsion balance crew in Tangipahoa Parish. With the present discovery, additional crews are expected to be moved into the trend. Possibilities extend eastward into Mississippi.

Potentialities of the Sparta-Wilcox trend were pictured in a discussion by Doctor Todd before a meeting of the Houston Geological Society January 19 attended by more than 350 geologists. His paper, in which his studies and theories have been confirmed by the Eola discovery, said:

The sands of the Sparta and Wilcox formations have come into recent and increasing importance as oil reservoirs. The purpose of this paper is to point out the possibilities and suggest some of the problems of this trend.

By way of background, the Sparta is the lower member of the Cook Mountain series of lower Claiborne age. It is named for a type locality in Bienville Parish, northern Louisiana. The Sparta is of continental origin, and at its outcrop consists of 75 per cent sand and 25 per cent sandy shale. It thins southwesterly into Texas and thickens southeasterly into Louisiana, so that it varies in thickness from 250 to 800 feet. It shales up rather rapidly on the Texas side but persists as a prominent sand body down to about the 9,000-foot level in Louisiana.

The Wilcox comprises a long series of sands and shales named for a type locally in Alabama. It is a very thick formation, as much as 3,000 feet having been penetrated in wells in central Louisiana. On the Texas side it has been subdivided into the Sabinetown, the Rockdale and the Seguin formations, with the upper formation being of chief interest at the present time. The sands in this formation are very well developed and persist down to about the 9,000-foot level, where it shales up rapidly. It shales up going west, so that it is predominantly shale in Montgomery County, although it becomes very sandy farther southwest. On the east it is very sandy as far over as Avoyelles Parish.

Information on the subsurface condition of both the Sparta and the Wilcox is very meager, as there have been very few wells carried to these formations at interesting levels. Historically, production from this part of the Eocene is very old. The oldest production in Texas, at Chireno in Nacogdoches County, comes from the Cook Mountain and Weches. The Urania production over in central Louisiana is from the Cane River and Wilcox. At Clay Creek in Washington County both the Sparta and Wilcox have been producing since the late twenties. And the Kittrell production in Houston County comes from the Carrizo.

However, all of these earlier discoveries were small, nonprolific fields that constitute a meager reward for the effort and expense of exploring the area. The result was that this trend very early acquired a dismal reputation that it continued to live up to for many years. With known sands extending for many miles down-dip from the outcrop, there never was a reason why this area should not produce oil, but there was the known fact that it did not produce oil in paying quantities.

In the past two years the facts have greatly

(Continued on Page 66)

Forest City Area Correlated With Adjacent Territory

By H. G. HOTCHKISS*

The great mystery area of the United States is the Forest City basin region of Kansas, Missouri, Iowa, and Nebraska. Just how much of the activity is psychological, and how much based on real merit, is a subject of dispute.

The geologists of some of the companies taking acreage do not like the area. And you hear about the same kind of reports from such sources as were heard about western Kansas 20 years ago: "Lack of fossil life"; "the oil has escaped"; etc.

But there are many leading oil operators and geologists who do believe in this area and who advance apparently sound reasons why it has a possibility of becoming an important oil-producing region.

Many Oil Strata Present

More strata that produce oil are present in the Forest City basin than are to be found in western Kansas. This is due to the fact that west of the Nemaha mountain range the section between the Lansing-Kansas City lime and the Mississippi lime becomes very thin. In fact, in some places the Lansing-Kansas City lime rests on granite in western Kansas.

Between the Lansing-Kansas City lime and the Mississippi lime in the Forest City basin are found Old Red, Peru, Hancock, Squirrel, Burbank, Bartlesville, and Burgess sands.

There is no place in western Kansas where any of these sands is present, so far as is known. The Fort Scott lime also is present in the same section. Sometimes it is called the Oswego. It produces both as a sand and as a lime in eastern Kansas. Dr. Walter A. Ver Wiebe, head of the department of geology of Wichita University, reports one well in that formation in western Kansas.

The Hunton lime, absent in many areas in Kansas, has been extensively deposited in the Forest City basin, and in some areas is more than 600 feet thick.

In the Hotchkiss book is a chart showing 24 strata, present in the Forest City basin, that produce oil in Kansas. Certainly the district is well endowed with prospective strata.

Many Showings

Fifty-five test wells that have been drilled in the area were reported to have had more than 100 showings of oil or gas. And more than 30 showings were reported to be in the pre-Pennsylvanian strata. Of these lower strata, Hunton ranks first with eight showings reported. Showings also were reported in Mississippi lime, St. Peter sand, Misener sand, Viola lime, Arbuckle lime, and Basal sand.

Showings in the Mississippi lime were reported at the top and to the extent of 150 feet below the top. The Hunton lime is credited with showings from several different strata, and this is true of the Arbuckle lime.

In the Pennsylvanian section are many strata that produce oil in Kansas: Topeka, Lansing-Kansas City, Fort Scott, and Howard limes; Stalnaker, Redd, Old Red (Knobtown), Peru, Hancock, Squirrel, Burbank, Bartlesville, and the Burgess sands. Nearly all of these are represented in the basin area with showings.

Scattered pools, mostly gas, produce from several of these shallow sands, and some of the pools have yielded a profit, but their production has not been great.

A list of these wells is published in the bulletin.

Favorable Structures

Pre-Mississippian structures in the Forest City basin area are similar in many respects to the type of structure that is producing the bulk of the oil in the Central Kansas uplift area of western Kansas.

In western Kansas there was a long period of erosion after the Viola lime was deposited and before the Mississippian age; then after the Mississippian was deposited, and before the Pennsylvanian was deposited, there was another long period of erosion that removed the Mississippi lime from the then surface for many miles back from the granite crest and removing most of the other strata from extensive areas.

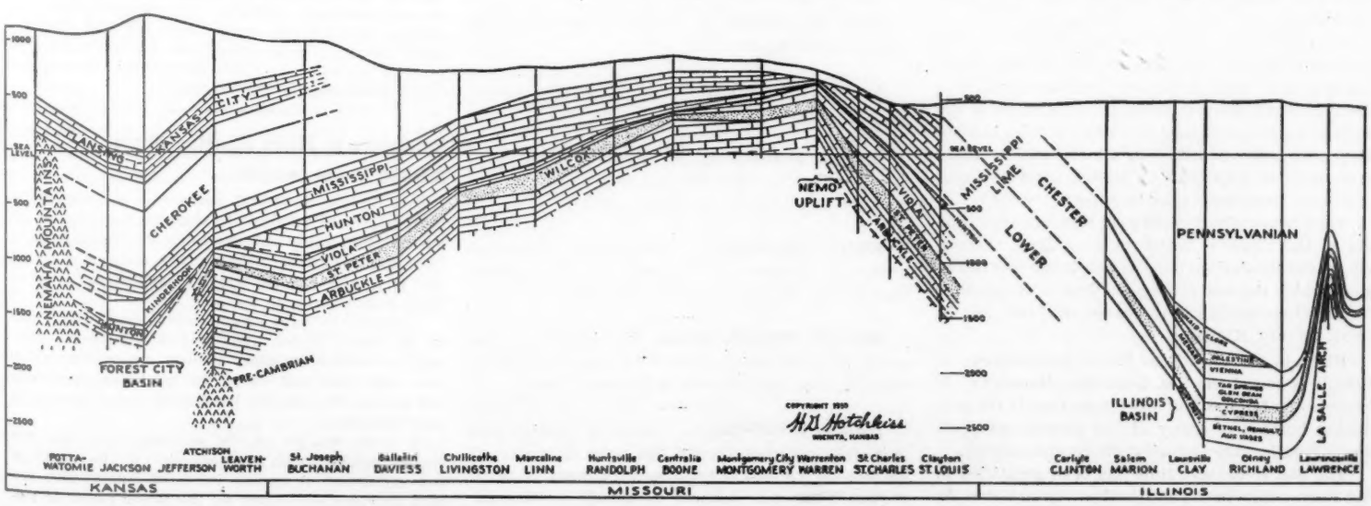
It is from the "highs" of these eroded strata that the bulk of the oil of western Kansas is produced. Such pools as Trapp, Silica, and Bemis produce nearly all of their oil from this type of structure.

The Mississippi lime is very persistent in the Forest City basin except where cut out by the Nemaha mountain range, but pre-Mississippian strata were eroded previous to the Mississippian age in much the same way as they were in western Kansas.

The western Kansas strata take their flanking from the Central Kansas uplift. The Forest City basin strata flank the Ozark Mountains of Missouri.

The McClellan subsurface map of Kansas

*Mr. Hotchkiss is the author of "Oil in the Forest City Basin," a bulletin that is just off the press. The bulletin may be purchased from H. G. Hotchkiss, 2403 Martha Street, Wichita, Kans.



Cross section, Forest City basin in Kansas-Missouri, compared with Illinois basin; explanation in text

shows in a concrete manner the similarity of these structural conditions.

Whether conditions were favorable for sealing oil in these structures in the Forest City basin is another matter of difference among geologists.

But it is a fact that the Forest City basin possesses the most important type of structure; that more than 24 strata have shown oil or gas; and it possesses structural conditions similar, in some respects, to the rich basin of Illinois. These are some of the factors that are attracting the attention of leading oil operators and geologists to this district.

High Endorsements

Dr. Raymond C. Moore, state geologist, and Dr. Kenneth K. Landes, assistant state geologist, of Kansas, were among the first authorities to recommend the Forest City basin to oil men. For many years they have been praising the prospects for production in the area and pointing out its similarity, in many respects, to the Illinois basin. When, and if, oil is found anywhere in the district, much of the credit will be due them.

But like the "voice in the wilderness," their recommendations were heard by few. They gave the writer the first insight into conditions in this area in 1937, and in September of that year the author wrote an extensive review of the Kansas sector of the basin for the Douglas County Republican of Lawrence, Kans.

This was issued as a special oil edition, the first one ever published in the Forest City basin area. Dal Dalrymple, the Journal's Kansas oil editor, paid a visit to the area and published a splendid feature story in The Oil and Gas Journal, and I believe that this was the first major publicity that the district ever received.

This caused many geologists and oil operators to turn their attention to the district. Then, with the discoveries in Illinois furnishing the fuel, Marvin Lee, geologist, and H. V. Elwell, operator, went into the Missouri sector of the basin, geologized it and began leasing. This and subsequent publicity given the basin lit the match that started the blaze to put on the real "heat," and the big leasing campaign that now takes in adjacent sectors of Missouri, Kansas, Iowa, and Nebraska was under way.

The cross section shows some of the relationships of the Forest City basin to the Illinois basin.

Observe how some of the strata are elevated by the Nemo uplift of northeastern Missouri. Too few tests have been drilled in Illinois to the lower strata to furnish much data as to their possibilities and condition.

In some areas in the Illinois basin the St. Peter sand, which some geologists believe is Wilcox, is 7,000 feet deep, and the granite is another 3,000 feet deeper.

Of particular interest in comparisons is the great thickness of the Chester lime of the Mississippian age. This limestone harbors sands and limes that are the producing strata of some of the leading pools in Illinois. The Chester lime has not been positively identified in the Forest City basin area, but Dr. Raymond C. Moore, state geologist of Kansas, believes it may be present locally.

The Chester lime produces in southwestern Kansas in the Shallow Water pool of Scott County, where the Mississippi lime section is 600 feet thick; and a thick deposit of Chester lime is responsible for a Mississippi lime thickness of 1,000 feet in Clark County, Kansas.

Right in the top of the lower Mississippian of Illinois is found the Ste. Genevieve limestone. It harbors the famous McClosky lime that is the producing horizon of many of the prolific oil pools discovered in Illinois during the recent activity.

The Ste. Genevieve lime has been identified in the Forest City basin, but indications are that its presence will be found to be local.

The Kinderhook formation is represented in the space between the Mississippi lime and the Hunton lime. It is Mississippian in age. At its base the Misener sand is deposited in patches in Kansas and is responsible for the prolific wells of the Zenith pool in Stafford County.

In the table of wells in the Hotchkiss book, one test in the Forest City basin area is credited with a showing of oil in the Misener and one with a showing that may be Misener. Doctor Moore states that outcrop information indicates Misener sand for the basin area.

In Illinois is the Carper sand producing from the Kinderhook. It is not certain whether it is equivalent to the Misener, but it is in the same formation and is deposited in patches.

The Hunton lime is found very deep in the Illinois basin and is called the "Corniferous," or "Niagaran." It is the source of production in some of the Illinois pools.

The Viola lime is called the Niagaran in Illinois, and it yields oil there.

The St. Peter sand is present but not producing in Illinois, and the same is true of the Arbuckle lime and deeper strata.

In the Pennsylvanian section of Illinois are many sands that produce oil and gas. They seem to have about the same characteristics as the Pennsylvanian sands of Kansas.

Eroded Strata

The map is on a small scale. It has to be to include a correlation for more than 500 miles distance. But, by observing closely, the reader will note that the Hunton is pinched out in Atchison County, Kansas; is thick from Buchanan to Linn counties, Missouri; and cuts out again in Warren County, Missouri, to show a thickening as it descends into the Illinois basin near St. Louis, Mo.

The Viola lime, comparatively thick in Atchison County, Kansas, grows thinner until it pinches out in Boone County, Missouri; then it grows thicker as it passes over the Nemo uplift and descends into the Illinois basin.

The Arbuckle lime and St. Peter sand are present all the way.

Information upon which this cross section is based was obtained from the geological surveys of Illinois, Missouri, and Kansas.

Obituaries

JOHN H. STINSON, 91, retired oil producer, died January 16 in Bradford, Pa.

J. EVERETTE RATLIFF, 54, oil operator of Vinton, La., died suddenly in that city January 16.

IRVIN E. BRADLEY, 63, oil man of Wichita, Kans., died last week in Tulsa. He had been an independent producer in Wichita for 15 years.

JOHN R. McGOWAN of Augusta, Kans., a traveling auditor for Universal Oil Products Co., died recently. He had been with the company since 1929.

WILLIAM ROBBINS SEIGLE, 59, chairman of the board, vice president and director of research of Johns-Manville Corp., died recently at Rochester, Minn.

WALTER L. SIDWELL, 57, Kansas oil operator, died at Wichita last week. He was one of the discoverers of the Hugoton gas field in southwestern Kansas. A native of West Virginia he followed oil through Indiana, Illinois, Kansas and Oklahoma and took up his residence in Wichita in 1919, operating in Kansas and northern Oklahoma.

J. A. SMITH, 60, died in Muskogee, January 19. He moved to Tulsa 45 years ago from Parkersburg, W. Va. He operated the J. A. Smith Drilling Co., until 18 years ago.

E. P. KILGORE, 53, died in Oklahoma City last week. He opened the Kilgore pool in southern Oklahoma. Eight years ago he began to prospect in southern Louisiana. His first well was dry but the second started the Zwolle field of Sabine Parish.

JOHN M. SPEARY, early operator in Ohio and West Virginia oil fields, died recently in Marietta, Ohio. For 10 years Mr. Speary operated in Kansas and Oklahoma, residing in Okmulgee, Okla. He returned to Marietta in 1931. He was interested in Link Oil Co., Tulsa.

Aircraft Lubrication Topic Of A.C.S. at Ponca City

Most transport airlines use the range 115 to 125 seconds Saybolt at 210° F. and the viscosity index is at least 95 minimum, C. M. Larson, chief consulting engineer of Sinclair Refining Co., New York, told members of the American Chemical Society at a meeting of the petroleum group of the Oklahoma section held in Ponca City, Okla., Saturday, January 21.

Mr. Larson in a prepared paper on the subject, "The Chemistry of Aircraft Lubricating Oils" stressed the fact that aircraft oils have become essentially chemically compounded oils. This development, he said, has become particularly important in Army and Navy aircraft. He explained that the Navy has made changes in certain engines and has established 90-105 seconds Saybolt Universal viscosity at 210° F. with a 95 viscosity index as the standard grade. The Army, he said, has a tendency to use 100 viscosity index minimums and uses, in addition to the 120 and 100, two lighter grades, namely, 80 and 65 seconds at 210° F. —4 seconds. This is because of the lower emergency take-off temperatures.

E. R. Irwin, associate chemist, materials division of the U. S. Army, Wright Field, Dayton, Ohio, explained some of the Army's findings covering aircraft lubrication, including investigations now under way. C. O. Willson, editor of The Oil and Gas Journal, reviewed some of the high points of a recent trip to South American oil fields in a talk at the dinner Saturday evening.

Conservation Branch Program Of Geological Survey

The fourth annual conference of the conservation branch of the Geological Survey, U. S. Department of the Interior, will convene in Salt Lake City, Utah, February 2 for one week.

Field employes from every public land state will study administrative and technical problems in leasing government lands for mineral development. There are approximately 13,000,000 acres of public lands, including Indian lands, under lease for such development. Last fiscal year, these lands brought a total income to the lessees of about $90,000,000, and revenues to the Government of $11,000,000.

Exhibitors to Make Houston Show Big Oil Event in 1939

Due to the additional space for showing equipment, a greater number of exhibitors have signed up for the 1939 Oil-World Exposition in Houston, Tex., from April 24 to 29, inclusive. The number as of the first of this year is 455 which greatly exceeds that of three months prior to the 1937 show.

Coverage includes manufacturers from every part of the United States. Tools and machinery for drilling, production, refining, natural gasoline manufacture, pipe line and other transportation operations will include not only the latest designs but last-minute improvements.

A great number of the exhibitors are planning moving exhibits with demonstration of the workings and application. A greatly increased outside area has been provided for setting up the larger pieces of machinery in operation during the show.

Pipe Line Controversy to Test Authority of F. P. C.

By HENRY D. RALPH

WASHINGTON, D. C., Jan. 23.—Several important precedents which will govern the administration of the natural gas act are involved in the pending controversy before the Federal Power Commission over the construction of a new natural gas pipe line into the northern Minnesota area.

Issues are involved in this case which will not only determine the future application of the yet untried natural gas law, but which also are of great importance from the standpoint of government administration and public policy. The importance of the case is shown by the slowness with which the commission is acting, and it is probable there will be appeals to the courts no matter how the commission rules.

First Proposal

The project is the proposal of the Kansas Pipe Line & Gas Co., a new concern apparently not affiliated with other major gas interests, to construct 2,300 miles of pipe lines from the Hugoton gas field in southwestern Kansas to the Mesabi iron range in Minnesota with branch lines to serve a total of 129 communities in the central Northwest. There is much opposition to the construction of this line, but the first point upon which the Federal Power Commission must rule is whether the commission has jurisdiction. A hearing on this point was held last week. The decision on this point will go far in determining the regulation of competition among natural gas companies and the extent to which any company can claim exclusive right to serve a certain territory.

The natural gas act provides that no natural gas company can extend its lines to a market already served by another company without a certificate of public convenience and necessity from the Federal Power Commission. Kansas Pipe Line & Gas Co. contends it needs no certificate because the area it proposes to serve is not now supplied with natural gas. Two other companies, Northern Natural Gas Co. and Montana-Dakota Utilities Co., contend this area is their natural market and should be supplied by them if at all. The crux is whether the word "market" in the law means a geographic area or a specific community.

Another vital issue is the attempt of bituminous coal interests to intervene in opposition to the construction of any new gas lines into this territory. The commission held a hearing October 21 on this but has not yet made a ruling. If it decides it does not have jurisdiction over the Kansas company's application and that no certificate is needed for construction, then the attempts of coal interests to intervene will be futile. If the commission decides it does have jurisdiction it will have to rule on the intervention of the coal interests. Heading the coal interests is the National Bituminous Coal Commission and thus one presumably independent agency of the federal government is attempting to influence the actions of another independent agency. Other coal interveners are the National Coal Association, United Mine Workers of America, Northwestern Retail Coal Dealers Association, and a number of individual coal companies operating in the Minnesota area.

There is no language in the natural gas act giving the Federal Power Commission authority to decide what type of fuel a community must use, but the intervention of the coal interests puts the F.P.C. in a difficult spot politically. If it dismisses the petitions or if it permits intervention but authorizes construction of a pipe line, it will be faced with criticism and probably political pressure from the United Mine Workers and the bituminous interests. If it denies the pending applications to construct gas lines solely on the ground that this would destroy a market for coal, the people in that area will protest that the commission is dictating the type of fuel they must use and denying them the benefits of natural gas.

The history of the case, briefly, follows: Early last summer the Kansas Pipe Line & Gas Co. proposed to build the line and applied to the Reconstruction Finance Corporation for a loan of $20,000,000. On July 7, Northern Natural Gas Co. asked the F.P.C. to delineate the areas in Minnesota and neighboring states which should be served by it and those which should be served by the proposed new line. The commission inquired of the Kansas company as to its plans, and on September 10 this company filed an application for a certificate authorizing the construction, but asked the commission to dismiss the application on the ground that the commission has no jurisdiction since no other natural gas company is operating in the area. The Bituminous Coal Commission petitioned to intervene almost immediately, followed by other coal interests, while gas producers owning rights in Kansas and Oklahoma petitioned to intervene in support of the project. On October 31 the Federal Power Commission ordered the Northern Natural Gas Co. to show cause why that company should not be ordered to extend its facilities to the area sought to be served by the Kansas company through construction of approximately 1,000 miles of main transmission lines northeastward from its present terminals. This company was apparently unprepared to undertake such a project and replied it would not oppose the application of the Kansas company since a study of this application revealed it did not propose to serve communities already reached by Northern Natural.

New Entry

On December 13 a new company entered the controversy, Montana-Dakota Utilities Co., which filed a petition to intervene in opposition to the Kansas company project on the ground that as soon as funds are available it plans to extend its lines eastward to communities in North Dakota and Minnesota, some in the territory proposed to be reached by the Kansas line. This company takes gas from the Baker field in Montana and North Dakota and the Bowdoin field in Montana and serves communities in Montana and the Dakotas. At one time this company had a state certificate

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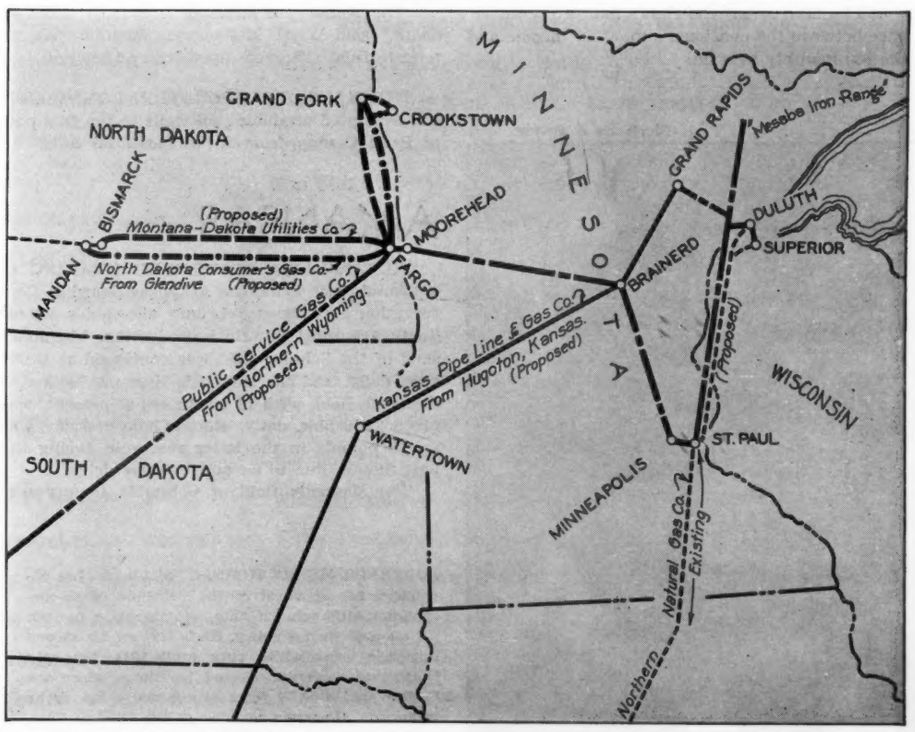

Map of area involved in competitive applications for pipe line permits before Federal Power Commission

STATE CAPITALS

TEXAS

THE INDUSTRY'S CHIEF INTEREST during the present legislature will apparently be in the fight over natural resources taxes versus sales taxes to support a pension plan sponsored by Gov. W. Lee O'Daniel. Due to the general opposition developing to the O'Daniel transaction tax program, calling for a 1.6 per cent tax on all transactions, a resolution introduced in the house last week took on more significance. In substance the resolution offered by Representative Albert Derden, and upon which he plans to ask for an early hearing, was as follows:

"Since many members of the legislature had pledged themselves to see that natural resources bear their just portion of the burden of taxes, and that they would not vote for, or submit to the vote of the people, a proposed sales tax except as a last resort; and whereas Governor O'Daniel had placed himself on record as opposed to any increase in taxes on natural resources and requested members of the legislature to submit to the people of Texas a new constitutional amendment wherein they are requested to adopt a transaction tax; be it resolved

"That we adopt as the policy of this house that we will first bend our efforts towards the consideration and passage of revenue bills which propose an increase in the taxes now paid upon the natural resources of this state, as well as other taxes which might be reasonably increased by the legislature, and that after such revenue bills have been passed and signed by the governor that this house shall immediately take up a bill or bills which have been or may hereafter be submitted proposing to liberalize the old age assistance in Texas."

THE TRANSACTION TAX OF 1.6 PER CENT presented by Governor O'Daniel to pay the state's part of a $30 old age pension for all persons over 65 exempts only the first sale of agricultural products and livestock; salaries and professional fees, street sales of newspapers, carfares of less than 10 cents and certain charities. The income derived from the taxes, estimated at $45,000,000 annually, would be used to pay the state's half of the difference between the pensioner's monthly income and the $30 monthly pension.

The bill further provides that to insure an increase in the tax on crude oil, should the pension measure be declared unconstitutional, a special severance tax of 1.6 per cent of the value of the oil be imposed. The bill would provide for an additional tax of 1.6 per cent on gasoline and crude oil every time they change hands, and on all equipment the industry buys or sells. Thus this pyramided tax might amount to 8 per cent or more in some instances. Only relief provided in the proposed measure would be the canceling of all ad valorem taxes paid to the state. The plan outlined in the proposed constitutional amendment calls for the bill to be voted on by the people in June, 1939, and if passed becomes effective September 1 of this year.

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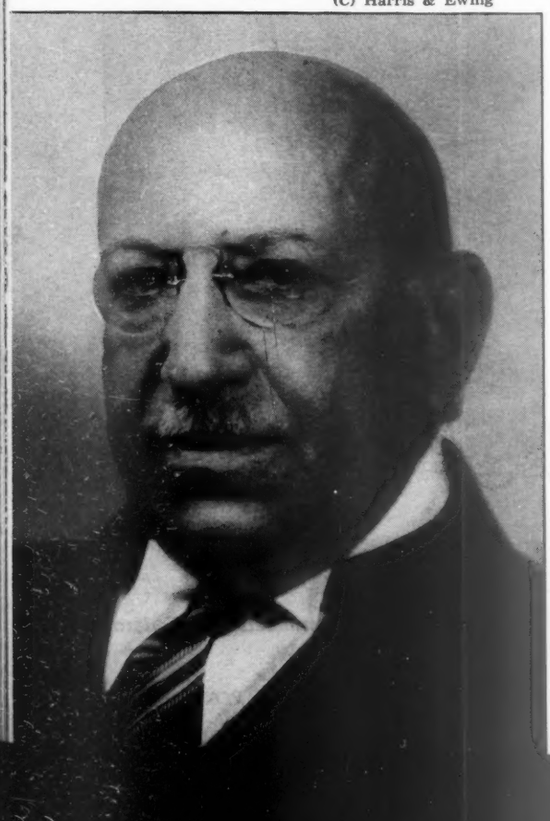


GOVERNOR HENRY HORNER, of Illinois, has announced his approval of the principle of oil-conservation although the state administration has not yet adopted such a policy. He is serving his second four-year term, which runs until 1941, the only Democratic governor elected in Illinois since the Civil War. He is 58 years of age and a lawyer by profession. He was a member of the Chicago Charter Convention in 1911 and was elected probate judge in Cook County in 1914, serving his eighteenth year in that position when chosen governor in 1932.

KANSAS

A 3 PER CENT TAX on crude oil and natural gas to finance free textbooks for school children was proposed in a bill introduced in the state senate by Joseph S. McDonald (D., Kansas City).

"The Kansas oil industry already is taxed to death," said W. E. McPherson, Wichita. "We intend to fight this measure tooth and toe nail."

THE KANSAS CORPORATION COMMISSION has exempted producing oil wells in the Otis pool of Rush County from future potential tests.

ARKANSAS

FOLLOWING A STATE-WIDE HEARING in El Dorado last week, the Arkansas Board of Conservation announced February allowables set for South Arkansas' new flush production. The Jones sand of the Schuler field was continued at 15,000 bbls. daily, and the Reynolds lime production of the same field, with 13 producers at present, was given 3,000 bbls. daily. Bottom-hole pressure was up 20 pounds in the latter reservoir during the past month, due to an active water drive.

The Magnolia field of Columbia County was allowed 3,000 bbls. daily, from the eight current producers and five more expected to be brought in before the end of February. During a period of production tests, the Atlanta field, most recently discovered pool in Columbia County, will be granted 2,000 bbls. daily.

The South Miller County extension of Rodessa will be held to 4,200 bbls. daily in the prorated lower Gloyd section. In that section of the field, reservoir pressure declined less than 1 pound per day, considered satisfactory in a gas-drive field.

A SECOND PUBLIC HEARING will be held by the Arkansas senate's oil and gas committee on a bill to create a state oil and gas commission with proration authority.

Nearly four hours were consumed in debate at a meeting last week when the committee opened discussion on the proposal.

Appeal for a second public hearing at which opponents of the bill might be better represented was made by Claude Crumpler, El Dorado attorney. He presented petitions bearing 1,058 signatures asking for a two-week delay.

O. C. Bailey, chairman of the state Conservation Board, which would be supplanted by the proposed oil and gas commission, told the committee the Mason bill was drafted to incorporate the best features of the oil conservation laws of Louisiana, Texas, Oklahoma and New Mexico.

Opposition to the measure was offered by F. C. Purviance, Lawson, who said he opposed proration.

Senator Joe Kimzey, Magnet, also asked the committee to delay action in order that amendments might be drawn. Among amendments suggested were to permit bringing of injunction suits in whatever counties the land involved was located; fixing the size of production units the commission might order for various fields; and changing qualifications for membership on the commission.

Advocates of the bill urged the importance of a state conservation law "with teeth in it." They recalled experiences in the Smackover and South Miller County fields which were dissipated by wasteful production methods.

Chief criticism of the bill was directed at sections authorizing the commission to order unitizing of lands for the development of oil. Mr. Crumpler charged this did away with "the rights of a man to run his own business." Proponents contended that the unit drilling system would serve to insure orderly development and would not work a hardship on small landowners.

MISSOURI

OIL AND BUSINESS MEN in St. Joseph, Mo., voiced vigorous protest against a bill before the state legislature providing for a production tax of 21 cents a barrel on any crude oil produced in the state.

The measure, introduced by Representative Roy Hamling, Democratic floor leader from Hamlin County, also calls for a tax of 6 cents a gallon on lubricating oil and 1 cent a pound on paraffin.

OKLAHOMA

NO OPPOSITION WAS REGISTERED to the application of the I.T.I.O. Co. for 10-acre well spacing in a new area near the Olympic pool of Okfuskee County, at a hearing before the Oklahoma Corporation Commission.

The area includes all of Section 5, W half W half Section 4, N half N half Section 8, E half E half Section 6-10n-9e, and S half S half Section 32 and SW SW Section 33-11n-9e.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Easier to Take

The advance in the posted schedules for Pennsylvania Grade crude oil on Saturday, ending a period in which there has been a steady decline in prices, is of particular significance to the entire industry at this time.

Pennsylvania Grade prices, starting the latter part of 1937 and continuing through the following year, dropped to the lowest level in five years because producers and refiners refused to read the handwriting that was to be clearly seen on the wall.

With a favorable market situation in 1936 extending into 1937, the producer increased his output in excess of demand for the finished products. Refiners, who at that time had a favorable margin on which to operate, also expanded their operations, absorbing crude which should not have been taken from the ground.

On top of this production situation was the fact that, with the slowing up in business activities starting in 1937, the demand for lubricants ended its month to month increases and, in the case of some oils, decreases got under way.

Ignoring this fundamental situation production continued to expand. When the refiners could no longer pay the existing price for crude oil the first decline was announced in September, 1937.

The excess in operations had gained such momentum that it was not possible to stop the trend and in steady succession five crude price cuts resulted in a decline that reached as much as $1.24 in some areas.

Meanwhile quotations on representative products continued to decline. Neutral oils decreased some 50 per cent from the 1937 high, with almost the same reduction in the highly important Pennsylvania bright stocks.

These low refinery prices brought unwanted developments in the wholesale and retail sales of Pennsylvania lubricants both in domestic and foreign markets. The premium position that has been held by these oils for many years was not aided by these developments.

Indirectly manufacturers of lubricating oils in other refining areas suffered and prices on bright stocks, neutrals and the finished motor oils were reduced generally.

The net result was a reduction in crude prices to substantially below cost of production in many cases, with unfavorable effects on many refineries.

In the end, both the producers and refiners had to take the medicine that would have been more quickly effective if it had been taken when the symptoms first became apparent. Producers were compelled to reduce their output within demand.

Now that a favorable statistical trend has been under way for three or four months, prices of lubricants have stiffened and this in turn has permitted the first advance in Pennsylvania crude.

The point here is these large losses to both producers and refiners were entirely unnecessary. One fraction of the energy that has been devoted to getting conditions back to a favorable basis would have been sufficient to continue the conditions of 1936 and early 1937.

The 1937 - 1938 developments in Pennsylvania Grade operations, while not of general importance, should furnish an interesting study for the entire industry today.

It is a concrete and simple example of what ails the industry and the only way to avoid these relapses which plague the business.

Pennsylvania operators in the end were forced to do under unfavorable price conditions what could have been done much more easily at an earlier date when the price trend was favorable.

This was another case where an ounce of prevention would have been worth more than a pound of cure and much easier to take.

LOUISIANA WELL

(Continued from Page 60)

changed, but due to the inertia of human thinking the bad reputation of this area has lingered on. Recent developments have not borne out the trend's previous pessimistic reputation, in that a very high percentage of the wells that have been carried to the Sparta and Wilcox have proven productive.

In several cases production has been obtained from only one or a few wells, so that the full significance of the producing horizon in the area is not yet known. This is the case at Segno, Cleveland and Eola, where the Wilcox is now producing, and at Cheneyville, where there is some Sparta production. However, two fields have been drilled up far enough to assure us of first-class oil fields. These two fields are Joe's Lake (Spurger) in Tyler County, which is producing from the Wilcox, and which we will temporarily assume is a typical Wilcox field. The other is Ville Platte in Evangeline Parish, which is producing from the Sparta, and which we will temporarily assume is a typical Sparta oil field.

The Ville Platte field was discovered in September, 1937. It produces from Sparta sands at 8,900 to 9,100 feet. The main producing sand, called locally the Tate sand, is 60 feet thick; the upper 30 feet is an excellent reservoir, but the lower 30 feet is somewhat shaly. Another sand, called locally the Hass sand, is from 20 to 25 feet thick and lies immediately over the Tate sand. The Hass sand has a very large gas cap, and makes oil wells only on the edge of the field. It now appears that between 2,000 and 2,500 acres will prove productive and that the field has a reserve of 40,000,000 to 50,000,000 bbls.

Joe's Lake was the first deep Wilcox production and was discovered in May, 1937, and that is about all you can say for sure about it. It is located on the fee lands of the Houston Oil Co. and the Republic Production Co., and there have been no official releases of information on the wells. It is considered to be producing from four Wilcox sands, having an aggregate thickness of 200 feet. The field is likely to cover 5,000 acres and to have a reserve of 200,000,000 bbls. Ville Platte and Joe's Lake seem to resemble each other both in their large extent and their flat structures.

So much for what has been found in the trend. Now what of the future? Will there be more such oil fields, or will these only be a flash in the pan that has temporarily brightened the trend? And if there are more fields to be found in the trend, why have they not been found before?

The unexpected strikes and present intense activity, cause us to re-examine our opinions, and often to conjure up new reasons for oil failures. We believe that a study of the history of this trend will reveal the following facts:

That in the pre-geophysical days (prior to 1923) this area suffered in comparison with the coast, in that subsurface does not conform to surface. Whatever the reasons, you map a pretty surface structure and drill a flat well. Another handicap of the area in the early days was that the depth limits of the then wildcats was about 5,000 feet, and there just probably isn't much oil in these formations above 5,000 feet. The immense sand outcrops of these formations catch so much meteoric water, that the formations have probably been flushed down to about their 5,000-foot levels.

That in the early geophysical days (1923 to 1930) this area suffered in comparison with the coast in that there were very few piercement domes for the refraction seismographs to find, and that the torsion balances were never very effective in the trend due to wooded lands and irregular terrain.

The advent of the early reflection seismograph (1930 to 1935) did not help this trend much. It is a hard area to work with seismograph, and because of the type of structure available the closest and most accurate form of reflection work is required. This close accurate work was not possible with early instruments and techniques.

But probably the greatest difficulty with reflection seismograph work in the trend has always been, and no doubt still is today, that enough work has not been done in the area to afford the seismologists the experience necessary to solve the problems of the area. Real major regional shooting programs are just now getting under way in this trend, and practically all work done in the trend in the past has been spot-shooting in hurried attempts to locate coastal type structures using coastal type methods.

In recent years with newer types of shooting, we have learned that you do not need 5-degree dips on a structure for it to produce oil. We have learned that the flatter structures often cover more acreage and suffer less from faulting. While this has changed our thinking on the coast, it has revolutionized thought in the trend, where the large flat structure is the usual type.

In the trend we have learned that Joe's Lake, Segno, Bancroft and Eola were all flat, unconvincing-looking pictures (the kind a geophysicist scorns) and yet they are all very fine oil fields today. The result is that we are coming to believe that any-old-kind of a picture will produce in this trend, and that no anomaly can be ignored. We also observe that drilled closure usually exceeds geophysical closure, so that when your picture shows 50 feet of closure you probably have 100 or 150 feet of closed structure.

In conclusion, it is our opinion that conditions are favorable for the accumulation of oil in the Sparta and Wilcox formations between their 5,000-foot levels (where they become connate) and their 9,000-foot levels (where they shale up) and

That improved seismograph instruments, better shooting techniques, new velocity curves and other improvements, coupled with a better understanding of the area, will result in the seismograph being as effective an instrument in the trend as it now is on the coast, and

That the new gravimeters will work well in the trend, and will greatly help in rapidly and economically isolating the areas of probable structural deformation. And there seems to be a tendency for the fields to directly overlie pronounced gravimeter anomalies, and

That the new electrical logging of bore-holes will greatly assist in the unravelling of many knotty problems in the trend, and

That through the combined use of these new and improved methods the real effective exploration of this trend is just now getting under way, and is still very much in its infancy. We can see no reason why many more large flat structures will not be found, and to us it seems likely that the ultimate productive acreage in the trend will equal or exceed that on the coast.

Texas Attorney General Seeks Better Prices

AUSTIN, Tex.—Continuing efforts to obtain a better price on "hot" oil, Attorney General Gerald C. Mann has obtained approval of an Austin district court on motions setting aside old judgments and ordering new forfeiture trials on approximately 48,000 bbls., a portion of the 125,000 bbls. of confiscated oil on which Mr. Mann cancelled scheduled auctions recently. The attorney general said he planned to make all unknown persons owning, claiming or in possession of the oil parties to the amended pleadings he will file in the new trial. In this way he said he hoped to give a clearer title to the seized oil in an effort to get better prices.

PIPE LINE CONTROVERSY

(Continued from Page 63)

to build a line east to Fargo but during the depression it surrendered the certificate but had never abandoned its plan of building into western Minnesota. On January 4 the situation was complicated by intervention of North Dakota Consumers Gas Co., which opposed the Kansas project and asked for a certificate to build lines from Mandan, N. D., eastward to serve 36 communities in North Dakota and four in western Minnesota. It would purchase gas at Mandan from Montana-Dakota Utilities Co. It declared that eastern North Dakota and the Red River Valley territory of western Minnesota is a natural market for gas produced in western North Dakota and eastern Montana and should not be served by gas from Kansas and southwestern fields.

Still another proposal to serve this area is pending before the commission, an application of Public Service Gas Co., a Montana corporation with offices in Minneapolis, to construct a 1,500-mile gas pipe line from Montana and Wyoming through North Dakota into South Dakota, Minnesota and Wisconsin at an estimated cost of $49,402,000. The company has not officially intervened in opposition to the application of the Kansas Pipe Line & Gas Co., but if the commission determines it has jurisdiction it will have to consider this petition along with the others and will either have to divide the area among the applicants or determine which one is entitled to new markets—unless it should determine coal is entitled to this market exclusively.

The Kansas Pipe Line & Gas Co. was the first to file an application with the commisssion, but its application is complicated by the fact that it applied to the R.F.C. for a loan of $20,000,000. The estimated cost of the project is approximately $21,500,000, but officials of the company have stated that approximately $5,000,000 would be raised privately and an 80 per cent loan asked from the R.F.C. The R.F.C. has not passed on the application but has postponed action pending a decision by the Federal Power Commission. If the Federal Power Commission permits the Kansas company to build the line the coal interests will undoubtedly attempt to bring pressure to bear on the R.F.C. to prevent financing on the ground that such a project would reduce employment in the coal industry, whereas the R.F.C. law contemplates loans for the purpose of increasing employment. The coal interests have intervened in opposition to the other proposals to build gas lines to the Minnesota area but none of these has suggested need for federal financial aid.

I.P.A.A. Announces Awards For High School Essays

The Independent Petroleum Association of America will award one prize of $1,000 and 18 state prizes of $100 each to senior students who are this year completing their work in accredited high schools, it is announced by Charles F. Roeser, president. The awards are to be for the best essays on "What Oil and Gas Have Done for My Community."

Announcement of the contest is being made to superintendents of schools in the states of Arkansas, California, Colorado, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Montana, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia and Wyoming.

Corning Oil Advanced

The South Penn Oil Co. advanced Corning, Ohio, crude oil 5 cents to a new price of $1.02 per barrel, effective January 24.

Less Crude for February on Gasoline Estimates

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in February, 1939, is 3,220,000 bbls. This is 50,600 bbls. (1.5 per cent) less than the estimate for January, and 4 per cent lower than the actual demand for domestic crude in February, 1938. The estimated demand is lower than a year ago because the anticipated gasoline stock increase for February, 1939, is only 4,500,000 bbls. compared with an actual increase of 5,904,000 bbls. in February, 1938; the gasoline yield is estimated as 44 per cent, compared with an actual yield of 42.8 per cent in February, 1938, and because the forecast of crude oil for export, fuel, and losses is lower.

Daily average crude oil production and runs to stills during the four weeks December 3 to December 31, were 3,306,300 and 3,156,200 bbls., respectively. During this period total crude stocks (including heavy crude in California) increased 1,692,000 bbls. Of this increase 828,000 bbls. was in foreign stocks, leaving a net increase in domestic grades of 864,000 bbls. The daily average of this figure (30,900), subtracted from the production, gives 3,275,400 bbls. as the apparent daily average demand for December, compared with 3,305,800 bbls. as forecast by the bureau.

TABLE 1—ESTIMATED DAILY AVERAGE CRUDE OIL DEMAND BY STATES—BARRELS

(As no changes in crude-oil stocks are involved in these estimates, they represent demand rather than production).

State—	Forecast Feb., 1939	Forecast Jan., 1939
Texas	1,297,500	1,332,900
California	580,000	588,400
Oklahoma	482,500	499,700
Louisiana	246,800	241,900
Kansas	148,600	153,900
Illinois	102,500	86,100
New Mexico	99,600	95,800
Wyoming	57,100	66,800
Arkansas	48,200	49,000
Michigan	47,200	47,400
Pennsylvania	43,200	42,300
Kentucky	17,100	17,100
New York	12,100	12,100
Montana	12,100	11,900
West Virginia	10,000	9,400
Ohio	9,000	9,100
Colorado	3,600	3,900
Indiana	2,900	2,900
Total	3,220,000	3,270,600

Motor Fuel

Domestic demand.—The weather in February during the past 13 years has been the most variable of any month and the variations have been most extreme. Such weather conditions add to the difficulty in estimating motor fuel demand and may result in a difference of more than 1,000,000 bbls. in gasoline consumption either above or below normal. The bureau estimates the domestic motor fuel demand as 33,400,000 bbls., an increase of 5 per cent over the 1938 demand. The estimated increase in demand is based on improved business conditions and the long-time upward trend of motor fuel demand per vehicle.

Exports.—Motor fuel exports, based upon forecasts of exporters, have been estimated as 3,400,000 bbls.

Stocks.—Stocks of finished and unfinished gasoline on November 30 totaled 69,535,000 bbls. According to statistics of the American Petroleum Institute, these stocks increased about 2,800,000 bbls. during December, bringing them to approximately 72,400,000 bbls. as of December 31. The bureau estimates an increase of 4,500,000 bbls. in finished gasoline stocks during February.

Gasoline production.—Benzol and direct sales and losses of natural gasoline have been estimated as 1,100,000 bbls., making refinery production 40,200,000 bbls. This is distributed among the various districts as follows (thousands of barrels); East Coast 5,220, Appalachian 1,330, Indiana-Illinois 7,120, Oklahoma 2,660, Kansas-Missouri 2,070, Texas Inland 2,830, Texas Gulf Coast 10,280, Louisiana Gulf Coast 1,220, North Louisiana-Arkansas 780, Rocky Mountain 1,050, California 5,640.

Crude Petroleum

Runs to stills.—Natural-gasoline consumption at refineries in February is estimated as 6.5 per cent of the total production, or 2,610,000 bbls. The yield of straightrun and cracked gasoline is estimated as 44.0 per cent. The application of this yield to the straightrun and cracked production of 37,590,000 bbls. gives crude runs to 85,360,000 bbls., or 3,048,600 bbls. daily. Foreign crude runs are estimated as 2,000,000 bbls.

Exports, fuel, and losses.—The estimate for exports is 4,600,000 bbls. The drop of 1,200,000 bbls. from the January estimate reflects not only the shorter month, but also a less optimistic view of exporters. Crude used for fuel and losses is estimated as 2,200,000 bbls

Total demand.—The total demand for domestic crude in February, 1939, as indicated by the estimates above, is 90,160,000 bbls., or 3,220,000 bbls. daily.

Crude-oil demand by states.—The breakdown of the total estimated daily demand for domestic crude oil of 3,220,000 bbls. gives the accompanying crude requirements by states of origin. As these requirements may be supplied either from stocks or from new production, contemplated withdrawals from crude-oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude to be produced.

No Sign of Settlement in Mid-Continent Strike

Prospects for a settlement appear remote at the beginning of the second month of the strike involving Oklahoma properties of Mid-Continent Petroleum Corp. It is reported that all jobs have been filled and that operations in refinery and field are fully manned, with production maintained at normal capacity. The company has announced that plans have been canceled for making additions to the refinery which would have entailed expenditures of $750,000. Furthermore, consideration is being given to shutting down the plant entirely. Jack N. Hays, speaking for the Oil Workers Union, states his organization with C.I.O. affiliations, has sufficient financial resources to carry on the strike through the summer.

J. L. Cooper, representing the U. S. Department of Labor, has been in Tulsa conducting his own investigation but no announcement has been made regarding the outcome of his activities.

Injunctions have been granted in 10 counties; to date the strike has not affected operations outside of Oklahoma. As the National Guard has been on duty in West Tulsa, no injunction was applied for in Tulsa County. There have been more complaints of disorder in West Tulst than in the field. There have been seven cases of interruption of pipe line service due to unexplained blasting since the strike started.

THE MARKETS*

CRUDE OIL: *Indicative of the improved statistical position of Pennsylvania Grade crude oil, South Penn Oil Co. January 21 advanced its postings 12 cents in the Bradford, Allegany, Middle district, and southeastern Ohio fields and 9 cents in southwestern Pennsylvania and West Virginia. Illinois daily production passed the 140,000-bbl. mark for the first time, pointing to continued sales of crude below posted prices. North Louisiana production, which has been a market threat, fell 5,440 bbls. daily.*

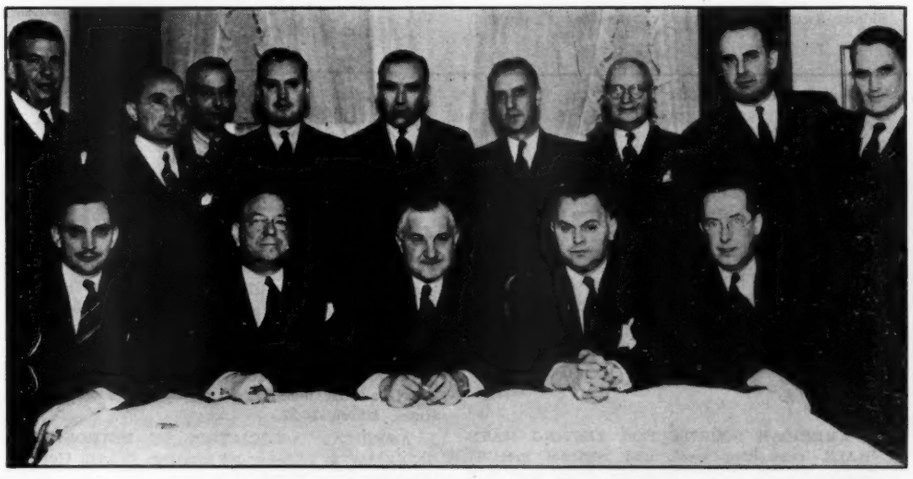
REFINERY: *Gasoline moved into moderately better position in the Mid-Continent and Middle West, though prices remain abnormally low. Several plant shutdowns, attributed to unprofitable operation, are tending to relieve the market of unneeded stocks. Heating oils vigorous on the North Atlantic Coast, but lifeless in interior areas, owing to prolonged mild weather.*

TANK-WAGON AND POSTED DEALER: *Socony-Vacuum Oil Co. reduced kerosene at many points in New England. Continental Oil Co., Standard of Kentucky, Standard of Louisiana, Standard of Nebraska, and Standard of Indiana made local adjustments at various points.*

FINANCIAL: *Oil shares went to new lows for the month in the general market decline on Saturday, but resisted pressure well. Average of 30 representative stocks for week ending January 21: High, 29.04; low, 28.18; close, 28.37. Week ending January 14: High, 29.19; low, 28.17; close, 28.59.*

**Detailed information in market section.*

NEW YORK FAIR NAMES PETROLEUM EXHIBIT COMMITTEE



Advertising managers of 15 leading oil companies have been appointed a special committee to promote travel to the New York World's Fair, and to familiarize the public with the exhibit to be staged by Petroleum Industry Exhibition, Inc., Thomas H. Taylor, president, announces.

Members of the committee include (seated): J. T. Avery, Richfield Oil Corp. of New York; T. H. Taylor, president, Petroleum Industry Exhibition, Inc., and assistant to president, Standard Oil Co. of New Jersey; M. H. Leister, Sun Oil Co.; James R. Rollins, Atlantic Refining Co.; Elliott McEldowney, Cities Service Oil Co. (standing): Paule E. McElroy, Ethyl Gasoline Corp.; B. N. Pollak, Richfield Oil Corp. of New York; Frederick S. Cannan, Sun Oil Co.; James Delaney, Cities Service Oil Co.; J. A. Donan, Standard Oil Co. of New Jersey; Sylvester M. Morey, Sinclair Refining Co.; Thomas E. Orr, Sinclair Refining Co.; John A. Miller, and E. F. Gerish, both of Standard Oil Co. of New Jersey.

Programs and Meetings

A.A.P.G. Annual Meeting, Program, Oklahoma City, March 22-24

Revising original announcements about the meeting place of the twenty-fourth annual meeting of the Association of American Petroleum Geologists in Oklahoma City, March 22, 23, and 24, the general committee, R. W. Laughlin, chairman, has arranged for the greater convenience of the members to hold the convention at the Skirvin Hotel.

J. T. Richards, chairman of the technical program, announces the following tentative arrangement of half-day sessions:

Wednesday morning, March 22, General session.

Wednesday afternoon, Permian basin symposium.

Thursday morning, March 23, Mid-Continent Pennsylvanian area.

Thursday afternoon, Economics and Recent Development.

Friday morning, March 24, Mississippi Embayment.

Friday afternoon, North Central states.

A preliminary list of papers, subject to revision, follows:

Donald C. Barton, Humble Oil & Refining Co. (presidential address): Correlation of Crude Oil With Special Reference to the Gulf Coast.

E. H. Sellards, University of Texas, Bureau of Economic Geology, Austin (presidential address, Society of Economic Paleontologists and Mineralogists).

F. M. Kannenstine, Independent Exploration Co., Houston, Tex.: Relation of Geophysics and Geology.

W. H. Twenhofel, University of Wisconsin: The Problem of Origin of Black Shales.

Carl O. Dunbar, Yale University: Type Permian of Russia and Permian of the World.

Vaughn W. Russom and Joseph H. McCoy, Sinclair Prairie Oil Co., Chickasha, Okla.: Stratigraphy and Surface Geology of the Anadarko Basin Region.

Sherwood Buckstaff, Shell Petroleum Corp., Tulsa: The Permian of Oklahoma.

George H. Norton, Atlantic Refining Co., Wichita, Kans.: Permian Red Beds of Kansas.

F. P. Shepard, Scripps Institute of Oceanography, La Jolla, Calif.: Recent Studies of the Ocean Floor Off California.

Wallace Pratt, vice president, Standard Oil Co. of New Jersey: The Basis for Proration in Texas.

Sidney Swensrud, assistant to president, Standard Oil Co. of Ohio: The Relation Between Crude Oil and Product Prices.

Robert H. Dott, director, Oklahoma Geological Survey: Regional Geology of Oklahoma.

Ira H. Cram, Pure Oil Co., Tulsa: Regional Structure of the Mid-Continent Area.

H. S. McQueen, Missouri Geological Survey: Geology of the Forest City Basin.

L. E. Workman, Illinois State Geological Survey: Subsurface Geology of the Chester Series in Illinois.

N. W. Bass, H. M. Smith and others, U. S. Geological Survey, Tulsa: Relationship of Oils in Mississippian Limestone and Shoestring Sands of the Cherokee Shale in Osage County, Oklahoma, and a Part of Southeastern Kansas.

The annual meeting of the business committee will be held as usual, at 2 p.m., Tuesday, March 21, the day preceding the technical sessions. A. I. Levorsen, chairman of the research committee, is arranging for the informal dinner of the committee at 6:30 p.m., Tuesday. At 8 p.m., following the dinner, the committee holds its open meeting and discussion.

The Society of Economic Paleontologists and Mineralogists will hold its thirteenth annual meeting and the Society of Exploration Geophysicists will hold its tenth annual meeting concurrently with the association convention.

Illinois Geological Society Holds Meeting at Mattoon

An illustrated talk on the "Subsurface Geology of the Chester and Lower Mississippian of the Illinois Basin," presented jointly by L. E. Workman and Norman Payne of the subsurface division of the State Geological Survey, featured the January meeting of the Illinois Geological Society in Mattoon.

Officers for 1939, elected at this meeting, follow: President, Verner Jones, Magnolia Petroleum Co., Mattoon; vice president, Melville W. Fuller, Carter Oil Co., Mattoon; secretary-treasurer, Elmer W. Ellsworth, W. C. McBride, Inc., Centralia.

Retiring first officers were Lynn K. Lee, president, Pure Oil Co., Olney; Verner Jones, vice president, and J. Rex McGehee, Shell Petroleum Corp., Centralia, secretary-treasurer.

Attending the meeting were 100 geologists from throughout Illinois, and Indiana, Kentucky, and Missouri.

South Louisiana Geological Society Elects Officers

The South Louisiana Geological Society, at its first regular meeting of the year on January 16, in the Majestic Hotel in Lake Charles, La., elected the following officers to serve for 1939:

President, Dean Metts, Humble Oil & Refining Co.; vice president, H. E. McGlasson, Stanolind Oil & Gas Co.; secretary, G. O. Grigsby, Stanolind Oil & Gas Co.; treasurer; Baker Hoskins, Shell Petroleum Corp.

A.S.M.E. Spring Meeting to Be Held in New Orleans

The American Society of Mechanical Engineers together with the Louisiana Engineering Society is planning to hold a joint meeting in New Orleans on February 23, 24, and 25. This is the first national meeting of the society held in New Orleans since April 19, 1916.

R. L. Nail is chairman of the publicity committee, Louisiana Engineering Society, and C. A. Bender, Jr., is chairman of the publicity committee, spring meeting A.S.M.E.

At the A.S.M.E. symposium on waste fuel, 2 p.m., Thursday, February 23, a paper on "Burning Various Types of Oil Refinery Fuels," will be presented by A. L. Wilson, Standard Oil Co. of New Jersey, Bayway refinery.

Saturday, February 25, at 9:30 a.m., the A.S.M.E. petroleum program will include papers on "Mechanics of Deep Oil Well Operations," by S. B. Sargent, Sargent Engineering Corp., Huntington Park, Calif., and on "Design and Construction of High-Pressure Equipment Used for the Completion of Deep Wells," by Herbert Allen, Cameron Iron Works, Houston, Tex.

On the fuels program a paper will be presented on "Burning Modern Bunker Fuel Oils," by J. A. Hayes, Todd Combustion Equipment, Inc.

Isom Heads Automotive Survey

E. W. Isom, Sinclair Refining Co., New York, has been appointed 1939 chairman of the automotive survey committee of the American Petroleum Institute by Dr. N. E. Loomis, chairman of the central committee on refinery technology of the Division of Refining.

CALENDAR

February

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Engineering Societies Building, New York, Feb. 13-16.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS AND LOUISIANA ENGINEERING SOCIETY, joint meeting, St. Charles Hotel, New Orleans, La., Feb. 23-25.

NORTH TEXAS OIL AND GAS ASSOCIATION, annual meeting, Wichita Falls, Feb. 25.

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, Ohio, Mar. 6-10.

INTERNATIONAL ACETYLENE ASSOCIATION, 39th annual convention, Houston, Tex., March 8-10.

WELDING CONFERENCE AND SHORT COURSE, University of Oklahoma, Norman, Okla., March 9-10.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention, Hotel Severin, Indianapolis, March 14-16.

AMERICAN PETROLEUM INSTITUTE, spring meeting of Southwestern District Division of Production, Plaza Hotel, San Antonio, Tex., March 16-17.

WESTERN PETROLEUM REFINERS ASSOCIATION, annual meeting, San Antonio, Tex., Plaza Hotel, March 20-22.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 24th annual meeting, Skirvin Hotel. Oklahoma City, March 22-24.

April

AMERICAL CHEMICAL SOCIETY, Baltimore, Md., April 3-7.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 13-14.

OIL-WORLD EXPOSITION, Houston, Tex., April 24-29.

May

PETROLEUM ELECTRICAL SUPPLY ASSOCIATION AND PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Rice Hotel, Houston, Tex., May 2-4.

NATURAL GASOLINE ASSOCIATION OF AMERICA, Hotel Tulsa, Tulsa, Okla., May 3-4-5.

AMERICAN PETROLEUM INSTITUTE, 9th mid-year meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

WORLD AUTOMOTIVE ENGINEERING CONGRESS, sponsored by S.A.E. for New York (May 22-26), Indianapolis (May 30), Detroit (May 31-June 2), San Francisco (June 6-8), May 22-June 8.

June

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

INTERNATIONAL

Internal Dissension in Mexico May Affect the Oil Situation

The internal dissension reported in the national administration of Mexican petroleum affairs, but just as consistently denied by government officials, again figured in last week's developments in Central America where the 17 American and British oil companies, whose properties were confiscated early last year, are still seeking adequate indemnity or return on the seized holdings.

The Mexican union of filling station operators on January 19 notified Pemex, the government company, that its members would strike February 4 unless given one day off weekly, annual vacations, free medical attention, exemption from the charge of one-quarter centavo a liter on gasoline sold for rental machines and exemption from rental of the stations themselves. Merits of the demands by service station unionists pass unjudged, but they are considered significant in view of the fact that much more drastic demands were the basis for confiscation of private properties through the instrumentality of the expropriation law.

Expulsion from Mexico last week of Frank L. Kluckhohn, the New York Times correspondent in Mexico City, served to focus attention on the friction between that country and the United States as a direct result of the oil seizure. Kluckhohn has been the most active correspondent in Mexico in disclosing general and detailed information on the petroleum barter deals with W. R. Davis & Co., of New York, German, Italy and Japan. Upon his return to Mexico City early last week after spending a month's vacation in the United States, Kluckhohn was instructed by the Mexican Interior Department to leave within 24 hours. In his report of the expulsion, Kluckhohn attributed the order to his activity in disclosing Mexican Government petroleum deals involving oil from the confiscated properties.

Since returning to American soil and writing dispatches from Brownsville, Tex., Kluckhohn has disclosed other details of the petroleum bartering trade between the Reich and Mexico, material that censorship apparently made impossible of transmission while he was located at Mexico City. Reports that Mexico was trying to sell aski marks (Germany's special foreign trade currency) to certain South American countries, were said to be causing State Department officials at Washington, D. C., the greatest concern at the moment. Other reports said Mexico planned to receive German goods in exchange for petroleum and then reship them to other countries for sale. Either of the two mediums for realizing more free currency from its bartering with Germany carries the threat of further curtailment of United States export trade in South and Central America. Several United States business representatives say there has been a sharp fall in their Mexican sales, particularly of typewriters, office equipment and optical and scientific instruments in which German articles have strongly competed with those of other countries.

Cause for further alarm to the State Department was the departure last week of Gen. Juan F. Azcarate for Germany, where he has been reappointed Mexican minister. General Azcarate's assignment to Berlin as Mexican minister to Germany carries particular significance since Ambassador Hugh R. Wilson of the United States is in this country on an indefinite leave and since the United States has been the leader in pleading for American solidarity. There is every indication that Mexico is seeking to establish closer relations with Germany.

At the time of Kluckhohn's expulsion from Mexico, a government press representative was informing another American newspaper questioner that "the outside world is not interested in Mexican oil deals with Germany." Upon return to this country, Kluckhohn wrote:

"As to the oil shipments, tankers are slipping mysteriously and constantly from Mexican ports, their papers recording that they are sailing for Lands End, England. They do not arrive in England and most of them discharge their cargoes in Hamburg, Germany. From an airplane yesterday (January 17), this correspondent saw two of these tankers loading at Tampico on the Mexican east coast.

"Despite this and other official subterfuges, it is possible to record that between January 1 and January 16, seven ships left Tampico for Germany, under consignment by W. R. Davis of New York, bearing 722,087 bbls. of oil from expropriated American and British properties. Other shiploads were consigned to Ernst Jung of Hamburg, who acts as agent for the German Navy. The last two tankers departing were the Scandinavian ships Henning Maersk and Jane Maersk. (The Henning Maersk has a registered gross tonnage of 9,386. The Jane Maersk has cargo capacity of 103,000 bbls. and registered gross tonnage of 7,691.)

"Mexican barter exports to Germany in 1939, through Mr. Davis alone, will exceed the total Mexican oil exports for 1938 if the present rate of shipments is continued. At present speed, the $17,000,000 straight barter deal with Germany handled through Mr. Davis should be easily executed. Shipments of Mexican oil in 1938 totaled 14,560,000 bbls., compared with 24,960,000 bbls. in 1937. In addition there are shipments this year for the German and Italian navies and probably several cargoes for Japan as in 1938."

Through Lombardo Toledano, leader of the C.T.M. (Confederation of Mexican Workers), who said he was speaking with approval of President Lazaro Cardenas, denial was made that Mexico has granted the Japanese Government a petroleum concession on the Isthmus of Tehauntepec. The petroleum export figure of 14,560,000 bbls. for 1938 reported by Kluckhohn for Mexico is considerably lower than issued by the government's press bureau in dispatches recently reaching the United States.

Details of recent shipments from the Eastern States Petroleum Co., Inc., refinery at Houston to the Italian navy were related in dispatches from Texas last week. The Italian tanker Nettuno was loaded in Houston late last week and sailed Saturday or Sunday for Balboa, C. Z. There the tanker will refuel, with Mexican oil refined in the United States, the Italian cruisers Eugenio di Savoia and Emanuele Filiberto Duca d' Aosta, which are at present off the South American coast after a cruise around Latin America. Under similar conditions the same tanker serviced the two cruisers in November at Buenos Aires.

Two other tankers have loaded at Houston since January 1 with products made from Mexican Government-produced crude for rendezvous with Italian naval vessels. Eight of the 11 tankers taking on Eastern States refined cargoes consigned to the Italian fleet since September 10 have been routed to the naval base at Spezia, Italy. A total of 680,840 bbls. of fuel oil and products for auxiliary service have been shipped to the Italian fleet.

The Norwegian tanker Jaguar, which broke in half mysteriously in mid-Atlantic last week was carrying 25,000 bbls. of gasoline for the W. R. Davis & Co. interest to Germany from Minatitlan, the Vera Cruz port, where the fuel was produced in the Mexican Eagle Oil Co. refinery. The tanker broke apart while battling high seas but was unequipped, apparently, with radio since no S.O.S. was sounded. Members of the crew were saved by the arrival of a freighter.

All-Time Production Record Established for Colombia

An all-time production record was established in 1938 for Colombia. Final reports for the past year show Tropical Oil Co., the only concern producing on a commercial basis in 1938, recovered 21,305,740 bbls. of crude, an increase of 1,007,894 bbls. over 1937. During December, Tropical produced 1,880,734 bbls., compared to 1,845,420 bbls. during November and to 1,824,956 bbls. for the same month in the previous year.

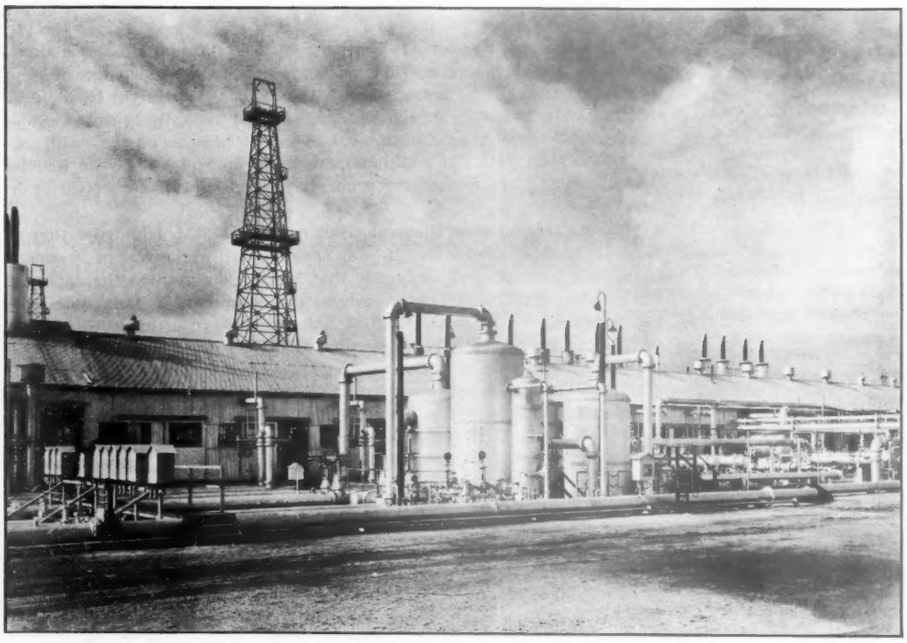
In Peru, International Petroleum Co., parent concern of Tropical and in turn a subsidiary of Imperial Oil Co., Ltd., of Canada, produced 1,104,520 bbls. of crude during December and accumulated recovery for 1938 totaled 13,267,604 bbls. International Peruvian production declined 1,455,149 bbls. during 1938, the total for 1937 standing at 14,722,753 bbls. In December alone International produced 1,104,520 bbls. compared to 1,096,679 bbls. in November and with 1,231,212 bbls. the same month in 1937.

In addition to International production in Peru, Lobitos Oilfields, Ltd., recovered a daily average of 7,350 bbls. per day during 1938, or about 2,682,750 bbls. for the year. On this basis, total 1938 crude production in Peru was in the vicinity of 15,950,400 bbls.

Two Wildcat Tests Are Abandoned in Eastern Venezuela

Two wildcat tests in eastern Venezuela have been abandoned. Standard Oil Co. of Venezuela No. 1 Indios in the Tucupita district of Delta Amacuro State, near the Macareo River, has been abandoned at 4,288 feet without obtaining important showings of oil or gas. North of the Temblador field in the Maturin district of Monagas Mene Grande Oil Co. No. 1 Aceital, drilled by Standard of Venezuela, was carried to 8,282 feet where it was abandoned.

Natural Gasoline



Compressor building and cooling system piping at General Petroleum Corp., Wilmington, Calif., absorption plant

J. A. Patton to Build Recycling Plant in East Texas

Second gas recycling and gasoline plant has been announced for the Long Lake pool of Anderson County in the East Texas area as a result of extensive tests of gas production in that portion of the pool.

James A. Patton and associates of Dallas, are behind the project.

Natural Gasoline Production in California Reported for November

	Gas treated (M.c.f.)	Nat. gasoline produced (bbls.)
San Joaquin Valley—		
Belridge	3,332,599	1,886,159
Elk Hills	51,745	106,740
Kettleman Hills	11,128,651	16,217,858
Midway-Sunset	975,447	1,987,378
Mountain View	293,083	341,786
Miscellaneous	934,257	569,873
Coastal district—		
Elwood	460,753	682,800
Rincon	166,775	216,675
Santa Maria	133,600	421,551
Ventura Avenue	3,651,647	5,104,745
Miscellaneous	465,436	443,837
Los Angeles Basin—		
Brea Olinda-Coyote	451,876	1,257,671
Dominguez	1,690,305	3,161,505
El Segundo	163,519	337,121
Huntington Beach	1,044,718	3,426,450
Inglewood	273,103	377,948
Long Beach	2,301,750	7,700,090
Montebello	686,534	682,711
Richfield	307,453	554,440
Rosecrans	795,994	975,274
Santa Fe Springs	1,454,467	4,985,263
Seal Beach	391,109	517,324
Torrance	534,377	884,725
Miscellaneous	1,239,062	2,500,011
Totals (all fields)	32,928,260	55,539,935

Distribution

	(Gallons)	(Gallons)
Stocks, beginning of month	2,158,113	
Production during month	55,539,935	
Delivered to refineries		54,605,338
Delivered to jobbers, brokers and blenders		504,411
Blended at plants for production of motor fuel		10,303
Losses		33,265
Stocks, end of month		2,544,731
Totals	57,698,048	57,698,048
Liquefied petroleum gas production	2,745,241 gals.	65,363 bbls.
Motor fuel produced	10,699 gals.	255 bbls.

American Liberty Erecting Grapeland Recycling Plant

FORT WORTH, Tex.—Contracts for American Liberty Oil Co.'s new recycling plant to be built near Grapeland, Houston County, Texas, have been awarded and clearing of the plant site has been started. Compression equipment will consist of a 500-hp. gas engine-driven unit, which will take high-pressure gas from the Woodbine sand and after the gasoline has been extracted, return it to the formation. The distillate is then to be blended into a motor fuel.

Two wells on the J. A. Bean lease will supply the plant with gas while a third well, on the Moody tract, will be used as an input well. It is expected that the plant, located on the John Collins lease, will have a supply of about 15,000,000 cu. ft. of gas daily. Plans of the company include building of a loading rack on a railroad about 2 miles southeast of Grapeland.

Natural Gas

Proration Regulations in Hugoton Area Reinstated

Proration regulations for the Hugoton gas field, Southwest Kansas, suspended in October at the request of operators and landowners, have been reinstated by the Corporation Commission as of January 1.

In an order reviewing testimony given by Republic Natural Gas Co. and others at a rehearing on the regulations at Hugoton, Kans., October 15, the commission said applicants for the rehearing "failed and refused to offer any evidence having a bearing upon the proper formula to be used and the acreage to be considered to accomplish the purpose" of the conservation law.

The original order provided that 640-acre tracts should be the basis for ratable takings with companies having wells on 160-acre tracts paying royalties to adjoining property tracts. It went into effect September 1 and was challenged immediately by major purchasers and operators in the field.

Kentucky Fuel Gas Sold to Inland Gas Corporation

ASHLAND, Ky.—The complete physical assets of the Kentucky Fuel Gas Corp. were auctioned off at the Boyd County Courthouse in Catlettsburg to Inland Gas Corp. for a high bid of $151,192.48.

The assets of the company were: oil and gas leases aggregating 16,117.96 acres in Boyd County, oil and gas rights in fee in a total of 16,736.18 acres in Boyd and 4,983.47 acres in Carter counties together with all rights of way and easements, all pipe lines, equipment, machinery, tools, drilling equipment, etc.

Canadian Conservation Board Continues Its Gas Order

CHATHAM, Ontario, Jan. 21.—An order of the Petroleum and Natural Gas Conservation Board has been issued permitting gas wells in the Turner Valley field to continue producing approximately 108,000,000 cu. ft. a day, to which figure the allowable production was increased on December 1 from a previous restricted quota of 40,000,000 cu. ft. The larger quota allows for the requirements of the Canadian Western Natural Gas Co. system and for the gasoline absorption plants in Turner Valley. In December it was forecast that on January 15 the flow would be further restricted to the market demand, plus such amount as could be returned to the formations by repressuring; but no steps have been taken toward installation of proposed repressuring plants.

The Conservation Board has completed a general check-up on bottom-hole pressures and gas-oil ratios throughout the crude area, both of which are understood to show improvement over tests taken early last fall.

Natural Gas and Petroleum Association

CHATHAM, Ontario, Jan. 21.—The Natural Gas and Petroleum Association of Canada will hold its 1939 annual convention at Niagara Falls, Ontario, on June 1 and 2, bringing the date as closely as possible to the Canadian Gas Association meeting at Hamilton on June 6 and 7.

Canadian Gas Production

OTTAWA, Ontario, Jan. 21.—Natural gas production from all Canadian fields in November totaled 3,354,385,000 cu. ft. against 2,503,641,000 cu. ft. in October, and 3,347,444,000 cu. ft. in November, 1937. For the 11 months of 1938 production was 29,102,476,000 cu. ft. against 28,074,086,000 cu. ft. in the same period of 1937.

Imports of mixed (natural and artificial) gas in November were 8,124,000 cu. ft. valued at $4,885 compared with 13,205,000 cu. ft. valued at $8,416 in October.

New Rate Is Proposed for City of Quanah, Tex.

QUANAH, Tex.—A gas rate for domestic consumers providing for a $1 minimum for the first 400 cu. ft. and 50 cents per 1,000 for all over 400 cu. ft. has been proposed for the city of Quanah by the United Gas Corp. retroactive to January 1.

North Basin Engineering Committee Organized

FORT WORTH, Tex.—A North Basin Engineering Committee was formed here last week by the majority of operators in the Dean, Slaughter, Duggan, Bennett and Wasson pools for the purpose of doing cooperative engineering work in the North Permian basin area; keeping records and data on performances, witnessing potentials and other matters. I. E. Willeg was chosen secretary. It will be similar in operation to other Texas engineering committees in Goldsmith, Yates and East Texas.

Refinery Expansion

Sinclair Shuts Down East Texas Refinery

The Sinclair refinery at Gladewater, Tex., has been closed. With a capacity of 4,000 bbls. of crude daily, this refinery handled more than a million barrels of oil last year. It had operated without interruption since 1931. Officials did not give any reason for its shutdown. Employes were given notices that their services would no longer be required. The Sinclair refinery is the sole representative of the major oil companies in the refinery industry of the field.

Globe Co. to Withdraw From Oklahoma City

WICHITA, Kans.—F. L. Jehle, vice president of Globe Oil & Refining Co., said Tuesday night his company will withdraw as a common purchaser in the Oklahoma City oil field January 20.

"We still have a contract with a major company for 5,000 bbls. a day which is being delivered to us from the Oklahoma City field," Jehle said. "That contract runs the rest of this year and will not be cancelled. But after January 20 we will take no Oklahoma City oil from our own connections."

J. B. Wright Constructing Refinery at Magnolia, Ark.

Equipped to handle 2,000 bbls. per day, a refinery is being constructed at Magnolia, Ark., by James B. Wright, Gladewater, Tex. He has closed a lease for 10 acres in the Magnolia oil field.

Montreal Interests Hold Options on Canadian Oil Companies, Ltd.

PETROLIA, Ontario. — While options taken by Nesbitt, Thompson & Co. on the purchase from the National Refining Co. of Cleveland of its holdings in Canadian Oil Companies, Ltd., may not be closed immediately, the purchasing interests are checking carefully on inventories and making a thorough survey of the properties and other assets.

It is understood the Montreal interests, headed by John Irwin, former president of the McColl-Frontenac Oil Co., are planning refinancing which will permit expansion of Canadian Oil Companies' present refining and marketing facilities. Existing properties include 135 distributing stations, 150 service stations, refinery at Petrolia of about 3,000 bbls. capacity, storage for 600,000 bbls., an oil-carrying Great Lakes freighter, and a pipe line carrying crude from Froomfield on the River St. Clair to the plant. Expansion may include the manufacture of lubricants and laying of a duplicate pipe line to deliver gasoline at Froomfield.

Consolidation of McClanahan and Leonard Interests in Michigan

Further announcement has recently been made regarding the consolidation of McClanahan Refineries, Inc., and Leonard Refineries, Inc., which was completed and became effective January 13. All of the net assets of the McClanahan organization were acquired by the Leonard company by payment in stock. All of the McClanahan employes have been retained by Leonard Refineries, Inc.; corporate offices of the latter company remain the same. The Ethyl blending plant which has been under construction will be in operation before the end of this month.

Atlas Closes Plant At Shreveport, La.

SHREVEPORT, La.—The Shreveport refinery of the Atlas Pipe Line Corp. has been ordered closed. All employes were dismissed. The refinery during the past year has taken crude oil from the East Texas, Cotton Valley, Schuler, Lisbon, and Shreveport fields. It has a capacity of 12,000 bbls. per day.

National Curtails Runs in Oklahoma and Kansas

The National Refining Co. announced January 19 its takings from Kansas and Oklahoma fields had been reduced 30 per cent.

A. B. Ayling, district superintendent, said the order affects connections in the two states. Major reason for this reduction, Mr. Ayling said, is failure of refining stocks to move normally.

Three Refining Companies to Install Catalytic Cracking Equipment

Catalytic cracking units will be built in refineries of the Consolidated Oil Corp., Shell Union Oil Co., and the Texas Co. over the immediate future and will make necessary the expenditure of several million dollars. The general design and licensing of these units will be done by the Universal Oil Products Co., pioneers in the art of catalytic cracking. Universal has perfected a process which produces 85 per cent motor gasoline of 81-octane number. The units may be operated to produce fuels of still higher octane value if demands warrant that method of operation. (See The Oil and Gas Journal, December 8, 1938, Page 23.)

Barnsdall Changes Provide for Greater Refining Independence

Greater independence of operation is planned for the Barnsdall Refining Corp., as a result of the resignation of E. B. Reeser from the presidency of that company and the election of Oscar L. Cordell to take his position. Mr. Reeser will continue as president of the Barnsdall Oil Corp., which company operates the oil producing properties of the Barnsdall group. These changes became effective January 21 and the announcement has subsequently been made that Frank Holsten, vice president in charge of refineries, has tendered his resignation to be effective February 1. Mr. Holsten will continue to act in an advisory capacity to the company for a period of six months.

The refining company operates plants in Wichita, Kans., Barnsdall, Okla., and a 5,000-bbl. plant at Corpus Christi, Tex., which was completed about one year ago. The company also operates about 800 bulk and retail stations which make up the marketing division.

Pipe Line Activity

Pipe Line Valuations Are Announced by I.C.C.

WASHINGTON, D. C. — The Interstate Commerce Commission has placed a valuation of $59,700,000 on the property of the Humble Pipe Line Co. used for common carrier purposes.

The company owns and operates trunk and gathering lines in Texas and New Mexico that form an integral part of the Humble Oil & Refining Co. system.

The commission also valued at $11,828,000 the common carrier property of the Ajax Pipe Line Co., which operates in Oklahoma, Missouri, and Illinois. These pipe lines form an integral part of the system of the Standard Oil Co. of New Jersey.

The commission placed a valuation of $16,400,000 on the property of the Great Lakes Pipe Line Co. that is used for common carrier purposes.

The company is controlled by eight corporations engaged in marketing gasoline. It has 1,541 miles of trunk pipe lines extending from the Mid-Continent field in Oklahoma and Kansas to Chicago by way of Kansas City, Omaha, Des Moines, and Minneapolis.

Tide Water Pipe Co., controlled by Tide Water Associated Oil Co., was valued at $4,700,000. The company operates lines in Illinois, Indiana, Ohio, Pennsylvania, New Jersey, and New York.

Bradford Transit, jointly owned by Tide Water and South Penn Oil Co. and operating in Pennsylvania and New York, was valued at $800,000.

Contracts Let for Looping By Illinois Pipe Line Co.

Illinois Pipe Line Co. has awarded a contract to Sheehan Pipe Line Construction Co., of Tulsa, to lay 158 miles of loops on the company's main pipe line through Illinois, Indiana and Ohio, originally laid in 1906. Work is to start shortly and be completed within 90 days.

The Sheehan company will lay 127 miles of 10-inch and 31 miles of 12-inch. Three crews of 100 each will be employed simultaneously in laying loops from Jamestown, Ind.; Rockwood, Ohio, and Elwood, Ind., to carry crude from the Mid-Continent and Illinois to the Standard Oil Co. refinery at Lima, Ohio, and to eastern refinery markets.

The welding contract was awarded H. C. Price Co. of Bartlesville. A 40-mile unit of 10-inch in Illinois was awarded to White Deer Pipe Line Construction Co. of Illinois.

J. C. Donnell, II, vice president of Illinois Pipe Line Co. and Ohio Oil Co., said the loops were required to take care of the increased volume of crude developed in the new Illinois basin field. No additional pump stations will be required.

To Construct 75-Mile Gas Line From Cotton Valley Field

LITTLE ROCK, Ark.—Negotiations for construction of a 75-mile pipe line for transportation of gas from the Cotton Valley field, Webster Parish, to the plant of the Arkansas Portland Cement Co. at Okay, Howard County, Arkansas, have been completed.

Announcement was made by J. F. Kauffman, superintendent of the Okay plant. The line will cost about $365,312 and will move 10,000,000 cu. ft. of gas daily, furnishing several towns en route. It will run within 16 miles of Texarkana.

The system will be constructed by Louisiana-Nevada Transit Co., headed by Gus Delaney of Ada, Okla. Gas contracts have been secured with Oliphant Oil Co. at Cotton Valley.

Houston-Goodrich Line Extension

The United Gas Pipe Line Co. recently completed 3 miles of 8-inch, 18 miles of 10-inch, 11 miles of 12-

inch, and 14 miles of 16-inch from Katy, Tex., to a tie-in with the main Goodrich-Houston line.

Average of high and low quotations on 30 representative common oil stocks listed on New York markets. Uppermost point on each vertical line represents average of highs while the base represents average of lows. Data reflect market at close of each week

TRENDS in the Market Value of Oil STOCKS

(Averages Compiled by Carl H. Pforzheimer & Co.)

1936	HIGH	LOW	CLOSE
January 4	31.48	29.45	30.87
January 11	33.05	30.12	32.62
January 18	34.24	31.96	32.64
January 25	34.29	32.13	33.92
February 1	35.44	33.50	34.74
February 8	36.32	33.24	35.28
February 15	35.74	34.24	34.59
February 22	35.84	33.89	35.25
February 29	35.84	33.68	35.04
March 7	37.37	34.72	36.54
March 14	38.27	34.81	37.09
March 21	38.34	36.17	37.43
March 28	38.10	36.03	36.59
April 4	37.96	36.40	37.55
April 11	38.17	36.78	37.14
April 18	37.32	35.62	36.02
April 25	36.44	33.76	34.51
May 2	34.54	31.67	33.03
May 9	34.19	32.22	33.14
May 16	33.83	32.25	33.28
May 23	33.49	31.33	32.54
May 29	32.81	31.50	31.87
June 6	32.39	31.11	31.49
June 13	32.24	31.19	31.69
June 20	32.72	31.32	32.42
June 27	33.66	32.16	32.98
July 4	33.35	32.24	32.84
July 11	34.14	32.10	34.02
July 18	35.22	33.57	34.92
July 25	35.73	34.33	35.14
August 1	35.66	33.91	34.23
August 8	35.17	33.56	34.73
August 15	34.90	33.75	33.99
August 22	34.40	32.67	33.04
August 29	34.10	32.87	33.69
September 5	34.10	33.14	33.63
September 12	34.85	33.15	33.84
September 19	34.31	33.09	33.89
September 26	35.01	33.51	34.22
October 3	35.52	33.82	35.30
October 10	37.07	35.07	36.61
October 17	37.05	35.58	36.28
October 24	37.89	36.15	37.23
October 31	37.78	36.08	37.34
November 7	39.75	36.73	39.11
November 14	39.65	37.33	37.72
November 21	39.10	37.06	37.72
November 28	38.79	36.88	38.38
December 5	39.41	37.20	38.97
December 12	39.57	37.86	39.02
December 19	40.08	38.06	38.43
December 26	41.00	37.64	30.62

1937	HIGH	LOW	CLOSE
January 2	42.22	40.08	41.05
January 9	42.97	40.45	42.15
January 16	42.98	41.23	42.15
January 23	43.25	41.27	42.94
January 30	43.61	41.60	43.03
February 6	44.44	42.20	43.45
February 13	44.28	42.61	43.35
February 20	44.03	42.44	43.17
February 27	43.39	41.49	42.37
March 6	43.83	41.90	43.25
March 13	45.26	42.82	43.94
March 20	44.48	42.05	42.52
March 27	43.15	40.94	42.79
April 3	44.50	42.22	43.95
April 10	44.66	41.54	42.89
April 17	44.63	42.35	43.57
April 24	44.47	42.01	42.26
May 1	42.40	39.46	41.77
May 8	42.54	40.97	41.39
May 15	41.32	38.79	39.67
May 28	41.67	40.47	40.97
June 5	40.97	39.59	40.57
June 12	41.19	34.36	39.54
June 19	39.71	37.79	39.31
June 26	39.81	38.55	39.29
July 3	40.75	38.27	40.58
July 10	42.20	40.83	41.59
July 17	43.02	41.53	42.51
July 24	43.55	42.18	43.01
July 31	43.27	41.55	42.59
August 7	42.92	41.87	42.09
August 14	43.44	41.76	43.03
August 21	43.43	40.89	41.28
August 28	41.89	39.58	39.93
September 4	40.64	38.27	38.94
September 11	38.52	34.93	35.59
September 18	37.31	34.19	35.30
September 25	35.51	32.04	32.40
October 2	34.88	31.98	34.28
October 9	34.54	31.62	32.40
October 16	32.33	29.19	29.82
October 23	31.65	24.45	28.80
October 30	32.61	28.14	31.90
November 6	31.55	28.80	29.03
November 13	30.92	28.33	30.23
November 20	30.53	26.92	27.54
November 27	28.33	25.78	27.96
December 4	29.23	26.99	28.61
December 11	29.11	27.50	28.09
December 18	28.86	26.97	28.52
December 24	29.45	27.97	28.49
December 31	28.50	26.41	27.42

1938	HIGH	LOW	CLOSE
January 8	30.15	27.38	29.89
January 15	31.03	29.31	30.30
January 22	30.52	29.10	29.45
January 29	29.62	27.02	27.25
February 5	28.31	26.76	27.75
February 12	28.74	27.21	28.42
February 19	29.50	27.99	29.42
February 26	31.01	29.47	30.28
March 5	30.41	28.98	29.26
March 12	29.28	27.62	27.99
March 19	28.9	26.6	27.3
March 26	27.78	24.18	24.41
April 2	25.14	22.69	24.64
April 9	26.99	24.36	26.84
April 16	28.07	25.80	27.98
April 23	28.33	26.47	27.75
April 30	27.48	25.91	26.19
May 7	27.74	25.83	27.57
May 14	27.89	26.23	26.55
May 21	26.55	25.25	25.32
May 28	25.71	24.14	24.55
June 4	25.52	24.51	25.38
June 11	26.39	25.12	25.87
June 18	26.04	25.05	25.62
June 25	29.21	25.95	28.97
July 2	31.12	28.53	30.90
July 9	31.49	29.90	30.73
July 16	32.17	29.99	31.39
July 23	32.60	31.05	32.15
July 30	32.64	30.76	31.32
August 6	29.50	28.76	29.18
August 13	31.64	29.32	29.58
August 20	30.48	29.42	30.04
August 27	30.61	29.03	29.23
September 3	29.35	28.01	28.95
September 10	29.19	27.86	28.03
September 17	28.34	25.89	26.46
September 24	28.27	26.09	26.73
October 1	29.09	25.31	28.92
October 8	29.93	27.94	28.45
October 15	28.70	27.08	27.93
October 22	29.14	27.29	28.78
October 29	29.40	28.10	28.36
November 5	28.98	27.93	28.55
November 12	29.87	28.40	29.53
November 19	29.58	28.14	28.50
November 26	29.02	28.07	28.41
December 3	28.79	27.63	28.14
December 10	28.59	27.42	27.83
December 17	29.21	27.57	28.63
December 24	28.93	27.81	28.50
December 31	29.66	27.91	29.52

Thirty companies whose common stocks make up the average values shown above: Amerada, Atlantic, Barnsdall, Consolidated, Continental, Creole, Gulf, Humble, Imperial, International, Mid-Continent, Ohio Oil, Phillips, Plymouth, Pure Oil, Seaboard Oil, Shell Union, Skelly, Socony, South Penn, Standard of California, Standard of Indiana, Standard of Kentucky, Standard of New Jersey, Standard of Ohio, Sun, Texas Co., Texas Pacific Coal & Oil, Tide Water Associated, and Union Oil Co.

World Production at New High Although U. S. Output Down

By H. STANLEY NORMAN

The worldwide quest for petroleum in 1938 was rewarded probably to the most abundant extent in history. Outside of the United States, world petroleum production hit a new high record. Although the United States lagged materially behind its record producing year of 1937, the net decline in world output was only 2.5 per cent in 1938 compared to the preceding year.

Considering the liquidation of United States crude stored above ground, 1938 requirements on the petroleum industry of this country were actually higher than 1937 by several million barrels, largely because of export increases.

All producing continents outside of North America and Africa set new records. Several countries attained new heights in output.

The net decline in world crude oil production was 51,447,000 bbls. The total yield is estimated at 1,995,096,000 bbls. compared to 2,046,543,000 bbls. in 1937. Increases abroad were sufficient to offset the substantial reduction in this country.

Total production of the North American continent slumped to 1,260,839,000 bbls., compared to 1,327,538,000 bbls. in 1937. This loss might have been minimized but for a decline of more than 13 per cent in Mexico where 1938 output is estimated at 40,500,000 bbls., in contrast to 46,907,000 bbls. in 1937. An increase of 4,472,000 bbls. in Canadian production, up 150 per cent from the 1937 yield, moved that country to an all-time record. The substantial increase in Canadian production tempered to some extent the declines in the United States and Mexico.

An increase of nearly 11,000,000 bbls. in the estimated production from the U.S.S.R. maintained Europe as the second largest producing continent despite a decline of 3,376,000 bbls. in Rumania. Europe produced 13.85 per cent of the world's crude last year. Yield for the continent at 276,089,000 bbls. was up 8,693,000 bbls. over 1937, a gain of more than 3 per cent.

In third place among the producing continents and trailing Europe by less than 30,000,000 bbls. in annual output is South America. By including Trinidad which is geologically and geographically associated, if not related by land ties, with South America, the margin between this rapidly developing continent and Europe is further minimized. From a standpoint of potential new production Venezuela and Colombia, the two largest sources of South American crude oil, are in position to move ahead rapidly in 1939, but the full weight of past, present and this year's activity will not be realized fully until 1940 when new pipe lines under construction in both countries start moving petroleum to world markets.

Both Colombia and Venezuela have extensive reserves of recently discovered production which has not been elevated to the status of commercial production because of the time required to build pipe line outlets. The extent of the producing potentialities in Venezuela and Colombia were described in detail in The Oil and Gas Journal International Issue of December 29, 1938. In addition to prospects for Venezuela and Colombia, Argentina set a new producing mark in 1938 and further increases are indicated by the scope of exploration work and development in proven fields by Yacimientos Petroliferos Fiscales, the government oil company.

Prospects for increasing European crude oil production are limited to a comparatively few countries. The proven and potential reserves of the U.S.S.R. are more extensive than generally realized and an unbroken chain of increases in output such as has been maintained, with one exception, for the past five years appears probable. Conditions in the U.S.S.R. are dependent on so many factors other than reserves underground, however, that forecasts must be made with reservation. Germany's increase of 817,000 bbls. in 1938 was partially due to the transfer of Austrian production to the Reich, but discovery of several new fields and accurate location of 70 to 80 salt domes within the country may be the forerunners of accelerated national production.

Hungary became the seventh largest oil producer in Europe by the discovery of one new field. Development was prosecuted under a conservative program during 1938. The country doubtless will pass France and Albania when the 1939 totals are compiled since it is planned to proceed with drilling until the field is delimited. A productive structure about 10 miles long is anticipated at present with another similar feature separated from that now producing.

The decline of 3,376,000 bbls. in Rumania's 1938 output compared to 1937 production was one European feature. Government spokesmen have been discussing a revision in the country's mining laws for months, but conditions which have discouraged exploration continue to exist. Until more liberal regulations governing the distribution of land around discoveries are written into Rumanian laws there is little chance of reviving production to the levels in 1934, 1935 and 1936.

Egypt, the only producing country on the African continent, produced approximately 1,500,000 bbls. of crude oil during 1938, an increase of 351,000 bbls. From a standpoint of preliminary and secondary exploration Egypt is one of the most active countries in the eastern hemisphere at the present. Subsidiaries of Standard Oil Co. of New Jersey, Socony-Vacuum Oil Co., Inc., Royal Dutch-Shell, Standard Oil Co. of California, Texas Co. and Anglo-Iranian Oil Co. combined have nearly 50 geological and geophysical parties working in the country.

In the revised production estimates for 1938, Iran output figure was advanced nearly 3,000,000 bbls. above preliminary calculations. Production was tapered off during the third quarter of the year and was then revived somewhat during the final three months. The year ended with Iran suffering only a slight decline from the record producing year of 1937. Two new fields have been proven productive, but plans are indefinite as to when they will be needed to supply the commercial requirements from that country.

Bahrein Island, in the Persian Gulf, produced approximately 500,000 bbls. more crude oil in 1938 than in 1937, totaling 8,297,000 bbls. for the year. During the final three months of the year, Bahrein output was curtailed to approximately 20,000 bbls. per day to allow room in the island's refinery for about 5,000 bbls. of oil daily produced from the Dammam field in Saudi Arabia. Construction of a 50-mile pipe line from the Dammam field to an ocean terminal by California Arabian Standard Oil Co. will be completed early in 1939. When transportation and shipping facilities are completed, Arabia will be elevated to an important position in Asia's petroleum production. The country appears likely to produce at least 3,000,000 to 5,000,000 bbls. of crude in 1939 and possibly a much greater quantity depending on conditions.

Absence of important discoveries in 1938 and the normal decline in older fields accounted for a decline in production from Netherlands East Indies. Although the search for new producing areas in Netherlands East Indies continues, the companies most vitally interested in that part of the world are devoting increasing amounts of money and time to New Guinea and Australia.

Iraq, one of the producing countries bordering the Persian Gulf in Asia, set a new record by producing 33,192,000 bbls. in 1938, a gain of more than 7 per cent. Rumors continue in circulation that Iraq Pipe Line Co. will loop or parallel its system terminating on the Mediterranean Sea, but officials deny the program is beyond the stage of contemplation.

Two producing wells have been definitely proven in the independent kingdom of Kuwait which touches the northern tip of the Persian Gulf. It is probable Anglo-Iranian Oil Co. and Gulf Oil Corp., joint owners of Kuwait Oil Co., will make provision in 1939 for shipment of oil from this 1938 discovery which is gradually assuming the proportions of a major strike.

WORLD CRUDE OIL PRODUCTION BY COUNTRIES

	1938 (est.) (bbls.)	1938 dly. av. (bbls.)
United States	1,200,883,000	3,290,090
U.S.S.R.	217,535,000	595,986
Venezuela	190,200,000	521,096
Iran	77,036,000	211,058
Netherlands East Indies	‡60,165,000	164,836
Rumania	48,800,000	133,699
Mexico	40,500,000	110,959
Iraq	33,192,000	90,939
Colombia	21,315,000	58,397
Trinidad	17,750,000	48,630
Argentina	16,900,000	46,301
Peru	16,045,000	43,959
India, British	9,648,000	26,433
Bahrein Island	8,297,000	22,731
Canada	7,450,000	20,411
Germany	†4,215,000	11,548
Poland	3,790,000	10,384
Japan	3,614,000	9,901
Ecuador	2,245,000	6,151
Egypt	1,500,000	4,110
Albania	730,000	2,000
France	465,000	1,274
Hungary	319,000	874
Other South American countries	*261,000	715
Czecho-Slovakia	126,000	345
Italy	109,000	299
World total	1,983,090,000	5,433,126

*Includes Bolivia, 91,000 bbls., and miscellaneous countries, 170,000 bbls. †Includes production formerly credited to Austria. ‡Includes Sarawak, Brunei, and Borneo.

New Record in Crude Exports; Products Show Gain

By H. STANLEY NORMAN

Exports of crude oil established a new record in 1938, foreign buyers taking more crude from producers in this country than any previous year. Exports of refinery products showed a substantial gain over the previous year, but the total was less than the peak year of 1929.

Imports continued to decrease in 1938 so that the exports exceeded the inshipments by a ratio of about 3.6 to 1. The accompanying four tables summarize the export and import data based on Bureau of Mines and A.P.I. reports.

In Table 4 is presented a preliminary breakdown of U. S. petroleum exports for the first 11 months of 1938. Two columns of percentage changes over 1937 are presented to indicate the trend during the fourth quarter of the year. In most instances the gains were tempered during October and November, compared to the status at the end of the third quarter. The outstanding exception to this general rule was in the case of motor fuel which extended its gain of 20 per cent at the end of nine months to 25.5 per cent at the end of November. This change is indicative of the rather rapid slump in motor fuel shipments during the final quarter of 1937. Motor fuel shipments also slumped in the final quarter of 1938, but not to the extent suffered during the preceding year.

Exports of motor fuel in Tables 1 and 4 do not correspond because of different practices in assembly of data by the Bureau of Mines and the Department of Commerce.

TABLE 1—IMPORTS AND EXPORTS FOR FIRST 11 MONTHS OF 1938
(Data from Bureau of Mines)

Exports

Year—	Crude oil (barrels)	Ref. products (barrels)	Gasoline (barrels)	Kerosene (barrels)	Gas oil (barrels)	Fuel oil (barrels)	Lubricants (barrels)	Wax (pounds)
1938	72,389,000	105,396,000	44,775,000	6,710,000	27,490,000	15,991,000	8,726,000	179,608,000
1937	62,118,000	98,529,000	35,864,000	8,223,000	28,108,000	14,333,000	10,138,000	209,788,000
1936	46,518,000	73,326,000	25,726,000	6,201,000	18,402,000	12,957,000	7,683,000	170,017,000
1935	47,280,000	69,262,000	27,137,000	6,137,000	*26,298,000	See note	7,596,000	204,795,000
1934	38,690,000	67,236,000	23,051,000	8,964,000	*25,648,000	See note	7,167,000	.....

*Gas oil, distillate fuel and residuals undivided in statistics prior to 1936.

Imports
(Data in barrels except wax in pounds)

Year—	Crude oil		Refinery products		Motor fuel		Gas oils, residuals		Wax	
	in bond	domestic	in bond	domestic	in bond	domestic	in bond	domestic	in bond	domestic
1938	3,207,000	20,345,000	18,478,000	6,752,000	*228,000	‡100,000	16,362,000	2,779,000	483,000	27,622,000
1937	1,774,000	23,318,000	10,605,000	16,853,000	†244,000	.....	18,080,000	2,487,000	486,000	30,880,000
1936	2,262,000	27,451,000	16,893,000	5,492,000	.....	.....	16,214,000	908,000	742,000	15,199,000
1935	6,424,000	22,479,000	11,073,000	7,646,000	.....	20,000	10,726,000	4,357,000	.....	§18,635,000
1934	4,227,000	28,132,000	13,248,000	4,167,000	.....	1,000	§11,329,000	.....	.....	§35,639,000

*149,000 bbls. of this figure unfinished gasoline.
†100,000 bbls. unfinished gasoline.
‡All unfinished gasoline.
§No distinction shown between bonded and duty paid for these years.

TABLE 2—IMPORTS OF CRUDE OIL AND REFINERY PRODUCTS FOR 1938 AT PRINCIPAL UNITED STATES PORTS
(Data from A.P.I. reports in barrels of 42 gallons)

	Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast	Grand total	Crude oil	Gasoline	Fuel oil	Gas oil	Other pet. oils
January	313,000	78,000	2,086,000	1,076,000	201,000	3,754,000	382,000	4,136,000	2,162,000	.....	1,742,000	.....	232,000
February	480,000	152,000	2,201,000	561,000	111,000	3,505,000	94,000	3,599,000	1,751,000	.....	1,754,000	.....	94,000
March	505,000	130,000	2,690,000	803,000	242,000	4,370,000	240,000	4,610,000	2,587,000	.....	1,871,000	.....	152,000
April	353,000	146,000	2,565,000	733,000	104,000	3,901,000	308,000	4,209,000	1,835,000	.....	2,136,000	.....	238,000
May	602,000	169,000	1,771,000	954,000	398,000	3,894,000	317,000	4,211,000	2,126,000	.....	1,838,000	.....	247,000
June	415,000	194,000	2,206,000	1,067,000	189,000	4,071,000	220,000	4,291,000	2,298,000	.....	1,903,000	.....	90,000
July	509,000	132,000	2,599,000	898,000	408,000	4,546,000	258,000	4,804,000	2,399,000	.....	2,227,000	.....	178,000
August	532,000	211,000	2,189,000	882,000	289,000	4,103,000	447,000	4,550,000	1,962,000	79,000	2,095,000	.....	414,000
September	457,000	206,000	1,975,000	800,000	208,000	3,646,000	506,000	4,152,000	1,705,000	.....	2,248,000	.....	199,000
October	351,000	131,000	2,503,000	945,000	245,000	4,175,000	474,000	4,649,000	2,708,000	.....	1,853,000	.....	88,000
November	381,000	191,000	2,782,000	633,000	324,000	4,311,000	536,000	4,847,000	2,378,000	.....	2,380,000	.....	89,000
December	386,000	103,000	2,812,000	1,085,000	251,000	4,637,000	548,000	5,185,000	2,932,000	.....	2,253,000	.....	.....
Total 1938	5,284,000	1,843,000	28,379,000	10,437,000	2,970,000	48,913,000	4,330,000	53,243,000	26,843,000	79,000	24,300,000	.....	2,021,000
Total 1937	5,210,000	2,957,000	30,085,000	10,746,000	3,489,000	52,487,000	4,490,000	56,977,000	27,683,000	145,000	26,374,000	470,000	2,305,000
Total 1936	5,700,000	4,862,000	27,600,000	9,529,000	2,463,000	50,154,000	5,344,000	55,498,000	32,559,000	(*)	21,561,000	635,000	743,000
Total 1935	4,062,000	5,352,000	22,424,000	8,854,000	2,450,000	44,136,000	6,490,000	50,626,000	30,940,000	(*)	19,686,000	(*)	(*)
Total 1934	4,081,000	1,595,000	27,512,000	8,540,000	2,781,000	44,509,000	3,437,000	47,948,000	32,231,000	(*)	15,574,000	(*)	(*)

*Totals unclassified.

TABLE 3—1938 RECEIPTS OF CALIFORNIA CRUDE OIL AND REFINERY PRODUCTS AT ATLANTIC PORTS

	Baltimore	Boston	New York	Philadelphia	Others	Total	Gasoline	Kerosene	Fuel oil	Other pet. oils	Crude oil
January	65,000	.....	72,000	43,000	76,000	256,000	.....	72,000	141,000	43,000	.....
February	109,000	.....	153,000	.....	325,000	614,000	290,000	61,000	179,000	84,000	.....
March	.....	.....	.....	.....	124,000	124,000	124,000	.....	.....	.....	.....
April	132,000	.....	68,000	117,000	195,000	512,000	240,000	72,000	.....	132,000	68,000
May	30,000	.....	180,000	160,000	152,000	522,000	313,000	64,000	.....	79,000	66,000
June	162,000	.....	.....	117,000	308,000	587,000	417,000	.....	.....	108,000	62,000
July	80,000	.....	188,000	130,000	115,000	513,000	448,000	.....	.....	.....	65,000
August	134,000	.....	85,000	.....	27,000	219,000	.....	.....	.....	71,000	148,000
September	167,000	.....	91,000	120,000	90,000	468,000	196,000	72,000	.....	50,000	150,000
October	.....	.....	.....	268,000	24,000	292,000	154,000	.....	.....	73,000	65,000
November	33,000	.....	156,000	.....	110,000	299,000	161,000	79,000	59,000	.....	.....
December	62,000	.....	63,000	.....	265,000	390,000	245,000	.....	145,000	.....	.....
Total 1938	974,000	.....	1,056,000	955,000	1,811,000	4,796,000	2,588,000	420,000	524,000	640,000	624,000
Total 1937	622,000	40,000	926,000	2,322,000	1,858,000	5,768,000	3,904,000	449,000	758,000	527,000	130,000
Total 1936	607,000	198,000	1,863,000	2,689,000	2,374,000	7,731,000	5,823,000	995,000	621,000	292,000	.....
Total 1935	767,000	420,000	2,303,000	3,307,000	2,897,000	9,694,000	7,335,000	1,118,000	1,241,000	.....	.....
Total 1934	1,831,000	3,201,000	9,389,000	4,891,000	7,515,000	26,827,000	8,610,000	1,626,000	14,946,000	1,645,000	.....

TABLE 4—PRELIMINARY BREAK-DOWN OF PETROLEUM EXPORT DETAILS
(Data from Bureau of Foreign and Domestic Commerce)
(Figures in 1,000's of bbls.)

	Eleven mo. 1937	Eleven mo. 1938	Per cent change 11 mo. 1938 over 1937	Per cent change 9 mo. 1938 over 1937
Crude petroleum	62,063	72,388	+16.6	+23
Motor fuel, total	33,952	42,607	+52.5	+20
Natural gasoline	3,232	5,411	+67.4	+74
Gasoline in bulk	26,854	34,412	+28.1	+31
Gasoline in containers	1,840	1,436	—21.9	—11
Naphtha	1,478	1,135	—23.2	—42
Benzol	455	207	—54.5	—57
Mineral spirits, total	93	94	+ 1.0	+24
Kerosene, total	8,009	6,478	—19.1	—17
In bulk	7,098	5,907	—16.7	—16
In containers	911	571	—37.3	—30
Gas oil and distillate:				
Fuel oil, total	27,049	25,970	— 3.9	+ 2
Residual fuel, total	12,034	14,065	+16.8	+22
Lubricants, total	10,064	8,816	—12.3	—13
Oils, red and pale	6,400	5,058	—20.9	—18
Oils, black	554	395	—28.7	—29
Oils, bright stock	1,565	1,424	— 9.0	—11
Oils, steam refined	956	902	— 5.6	— 5
Oils, transformer insulating	29	26	—10.3	— 8
Oils, small package	23	22	— 4.3	— 5
Oils, other	537	819	+52.5	+46
Greases, all kinds	263	181	—31.1	—32
Liquid petroleum gases (1,000 lbs.) total	8,718	4,116	—52.7	—63
Paraffin wax (1,000 lbs.) total	209,731	179,566	—14.3	—19
Unrefined	92,530	83,289	— 9.9	—14
Refined	117,201	96,277	—17.8	—23
Asphalt (1,000 long tons) total	191	196	+ 2.6	+ 1
Petroleum, unmanufactured	34	34		+ 4
Petroleum, manufactured	129	130	+ .7	+ 6
Natural, unmanufactured	15	11	—26.6	—30
Natural, manufactured	13	12	— 7.7	— 9
Petroleum coke (1,000 long tons)	140	129	—22.1	—30

Fifty High Points in 1938

January.

Mid-Continent Petroleum Corp. opens Ramsey pool in Payne County on January 1.

South American Gulf Oil Co. (Texas and Socony-Vacuum subsidiary) orders 250 miles of 12-inch pipe for line which will provide outlet for Barco concession in Colombia.

International Petroleum Co., Ltd., advances $25,000,000 to Mene Grande Oil Co. (Gulf) on purchase of half interest in eastern Venezuela property.

Shell Petroleum Corp. announces gasoline line under construction from Wood River refinery to Indianapolis will be extended to Ohio points.

U. S. Maritime Commission will pay part of cost of 12 new tankers for Standard Oil Co. of New Jersey, the tankers to be designed so they will be available for war service.

Carter Oil Co. completes first well in the Loudon pool, Fayette County, Illinois.

Federal jury at Madison, Wis., January 22, convicts 16 oil companies and 30 officials of conspiracy to fix gasoline prices.

Texas Railroad Commission on January 23 orders Sunday shutdown in that state for six weeks.

New discoveries extend Wasson-Denver field in Gaines and Yoakum counties, West Texas, and area becomes one of the major reserves.

The Oil and Gas Journal survey shows crude oil reserves on January 1 in the United States totaled 13,489,457,944 bbls., the highest in history.

February.

First crude oil shipped from Temblador field, new producing area in eastern Venezuela.

Gusher flows in Music Mountain section of Bradford, Pa., area.

President Roosevelt expresses alarm regarding possible oil shortage in connection with indicated support for tax on fuel oil.

March.

Further extensions, including new sands, to K.M.A. field in North Texas point to field large in area with reserve in excess of 500,000,000 bbls.

East Texas completes 25,000th well.

Mexican Government on March 18 expropriates oil properties of oil companies operating in that country estimated to represent values in excess of one and one-half billion dollars.

April.

Continental Oil Co. drills No. 1 Wasco in Kern County, California, to 15,004 feet, deepest test ever drilled.

Southern Illinois on April 1 had 15 new pools and 350 completed wells, with production increasing steadily.

Anglo-Egyptian Oilfields, Ltd., completes well on Ras Gharib structure.

Several pipe line companies start prorating crude purchases in Mid-Continent taking less than state allowables.

Kuwait Oil Co. (Anglo-Iranian and Gulf subsidiary) gets production in wildcat test in Kuwait of the Persian Gulf area.

Governor Huxman of Kansas, on April 25, following meeting with purchasers, issues first threat to withdraw from interstate oil compact in favor of federal control of oil business.

May.

Kanotex Refining Co. of Arkansas City, Kans., reduces posted prices of its crude purchases 25 per cent. Other buyers do not meet reduction.

K.M.A. field in North Texas passes East Texas as most active drilling area.

Texas Railroad Commission starts Saturday shutdown in addition to Sunday shutdown in crude production operations beginning May 14.

Decline of 176,000 bbls. daily in crude oil production for week ending May 21 brings supply in line with the demand.

Reports at New Orleans annual meeting of Natural Gas Department of A.G.A. show gas reserves are increasing, with more outlets needed.

Tenth International Petroleum Exposition opened in Tulsa May 14 and extended through May 21.

Senator Borah in Washington says "Four or five companies are dictating oil policy of the United States."

June.

President Roosevelt signs Lea bill, giving Federal Power Commission wide administrative authority in interstate operations of natural gas industry.

Oil marketing companies take advantage of New Jersey law, effective June 1, permitting suppliers to specify the retail prices at which their products shall be sold.

Judge Patrick C. Stone on June 2 accepts nolo contendere pleas of 24 defendants—13 companies and 11 individuals—in jobber-contract suit of government and assesses fines totaling $385,000. Charges against 27 individual defendants dismissed.

No. 1 Tate opens Salem pool in Marion County, Illinois, on June 30.

Nine major oil marketing companies operating over a large area in the United States announce they will honor each other's credit cards.

July.

Plans are completed for the construction of a 230-mile pipe line extending from Lance Creek field, Wyoming, to Denver refineries by Continenetal Oil Co. and associates.

Wildcat in Clare County, Michigan, 25 miles from nearest production, opens new field.

Well completed July 16 near city limits of Shreveport, La.

October.

California Arabian Standard Oil Co. brings in well which definitely establishes important production in Dammam field of Saudi Arabia.

Col. E. O. Thompson, chairman of Texas Railroad Commission, conveys message from President Roosevelt to annual A.P.I. meeting in Tulsa, suggesting that refining operations be brought under Interstate Oil Compact Commission.

Illinois Basin Issue of The Oil and Gas Journal indicates that new reserves of that area exceed 200,000,000 bbls., with production rapidly approaching 100,000 bbls. daily.

Decline in purchases by Japan major factor in California's unfavorable oil statistical situation.

November.

Lease play in Forest City basin area extends into Missouri, Kansas, and Iowa.

A.P.I. at annual meeting in Chicago enlarges executive committee and elects an oil jobber vice president in charge of marketing division.

First tanker shipment of crude oil from Bachaquero field, a large new reserve on the eastern shore of Lake Maracaibo in Venezuela.

December.

Economists predict gains in domestic gasoline consumption in 1939 ranging up to 4 per cent, with substantial increases in fuel oils.

Ethyl Gasoline Corp. permits ethylizing of third-grade gasoline, followed by Standard of Indiana, announcement that 67-octane third-grade will be marketed starting December 20.

California operators launch move to reduce state's production to demand, estimated at 600,000 bbls. daily.

Atlantic Refining Co. ships drilling rig to Cuba for first test of large holdings.

Governors-elect of Oklahoma, Kansas, and New Mexico pledge support to Interstate Oil Compact Commission at regular meeting held in Fort Worth December 15.

Representatives of major refining organizations outline their operations for first time at hearing of Texas Railroad Commission in Austin.

Completions in 1938 Declined

By JAMES McINTYRE

Of the 27,149 wells completed in the United States in 1938, 19,121 were oil wells, 1,985 were gas wells, and 6,043 were dry holes. While the completions were 5,411 fewer than in 1937, and while wildcatting was on a much reduced scale, many discoveries of new oil and gas fields were made, new sands were developed in old fields, and notable extensions were given to fields that had been discovered in earlier years.

Kansas

Notwithstanding rigid proration because of loss of markets to the new Illinois fields, Kansas operators completed 1,573 wells last year, opened production in 62 outpost and wildcat wells, and found new pay horizons in 10 established pools in Barton, Russell, Reno, Cowley, Ellis, and Rice counties. It may be that a considerable number of the new pools will eventually become a part of the neighboring fields.

Wildcatters met with success in Ellis, Pratt, Ness, Russell, Sumner, Barton, McPherson, Rice, Sedgwick, Ellsworth, Chautauqua, Reno, Stafford, Graham, Cowley, Finney, Rooks, Barber, Ford, and Kingman counties.

Three of the discoveries were gas fields. Among the wildcat wells were 15, each of which produced more than 1,000 bbls. initially, the largest a 2,644-bbl. well in Ellsworth County. Of the 253 wildcats completed during the year, 62 found oil or gas in commercial quantity, or about one strike for each four tests drilled, a very good record of wildcat success. The average depth of the wildcat oil and gas wells was 3,327 feet, while the average depth of the wildcat dry holes was 3,425 feet.

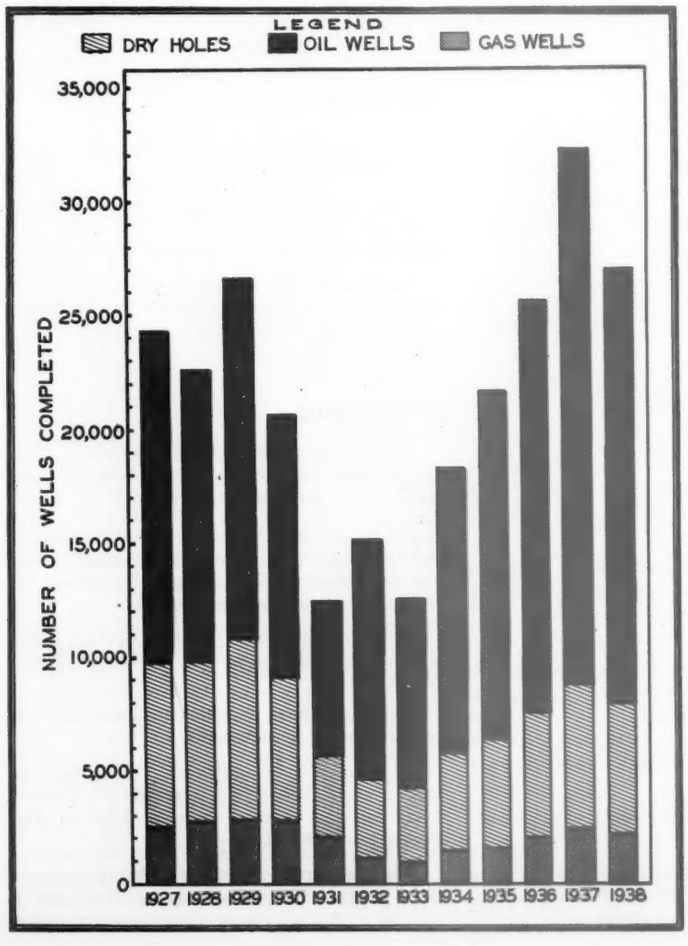
The Trapp district was extended from Russell into Barton County, and the South Trapp pool in Barton County became one of the most prominent pools in the state. The Bemis pool in Ellis County was extended to include 700 new productive acres.

Oklahoma

Oklahoma shared with Kansas in the loss of crude markets, for which the new Illinois fields were largely responsible; but 1,654 wells were drilled in that state during the year and 40 oil pools and gas fields were opened, including the prolific Ramsey pool in Payne County, where the discovery well produced 13,344 bbls. initially and the wells that followed ranged from 5,700 bbls.

(Continued on Page 79)

Well completions over a 12-year period including dry holes



Summary of Completed Wells in All the Fields of the United States in 1938 and 1937

		Comp.	Init. prod. (bbls.)	Dry holes	Gas wells	Oil wells	Av. Init. prod. (bbls.)
Eastern	1938	3,660	13,810	314	698	2,648	5.2
	1937	6,127	15,391	404	969	4,754	3.2
Central Ohio	1938	544	284	182	340	22	12.9
	1937	654	661	272	353	29	22.6
Lima, Ohio	1938	34	269	13	10	11	24.5
	1937	75	1,283	20	11	44	29.0
Indiana	1938	158	1,711	69	43	46	37.2
	1937	144	554	58	39	47	11.8
Kentucky	1938	924	43,033	314	126	484	88.9
	1937	834	14,313	234	193	407	35.2
Michigan	1938	1,000	255,148	406	28	566	450.8
	1937	932	307,806	277	69	586	525.3
Mississippi	1938	25	.....	19	6	0	....
	1937	26	.....	23	3	0	....
Alabama	1938	3	.....	3	0	0	....
	1937	2	.....	2	0	0	....
Florida	1938	0	.....	0	0	0	....
	1937	1	.....	1	0	0	....
Illinois	1938	2,233	489,590	408	19	1,806	271.1
	1937	392	80,282	117	3	272	295.1
Kansas	1938	1,573	643,863	402	63	1,108	581.1
	1937	2,590	1,479,293	606	117	1,867	792.3
Oklahoma	1938	1,654	214,978	545	123	986	218.0
	1937	2,672	677,156	697	123	1,852	365.6
North Central Texas	1938	3,130	875,321	1,114	43	1,973	443.6
	1937	2,492	257,395	1,088	46	1,358	189.5
East Central Texas	1938	319	32,420	122	25	172	188.4
	1937	737	151,135	97	19	621	243.4
East Texas	1938	1,641	83,793	43	1	1,597	52.5
	1937	2,338	106,833	79	0	2,259	47.3
East Texas Border	1938	135	37,225	15	10	110	338.4
	1937	289	96,010	33	19	237	405.4
West Texas	1938	2,045	1,568,254	241	16	1,788	877.1
	1937	2,806	2,018,229	331	11	2,464	819.1
Texas Panhandle	1938	561	196,265	26	105	430	456.4
	1937	830	312,029	33	156	641	486.8
Southwest Texas	1938	2,568	295,350	747	105	1,716	172.1
	1937	3,088	322,789	846	113	2,129	151.6
Gulf Coast—Texas	1938	1,411	469,361	269	36	1,106	424.4
	1937	1,695	649,782	313	61	1,321	492.0
Gulf Coast—Louisiana	1938	525	127,732	186	10	329	388.5
	1937	453	139,144	170	10	273	509.7
North Louisiana	1938	622	167,970	145	116	361	465.0
	1937	680	178,572	136	138	406	439.8
Arkansas	1938	251	139,250	44	3	204	682.6
	1937	182	68,495	78	1	103	665.0
Nebraska	1938	1	.....	1	0	0	....
	1937	3	.....	3	0	0	....
Montana	1938	109	5,391	27	13	69	78.1
	1937	217	12,810	56	26	135	95.0
Wyoming	1938	157	45,633	43	19	95	480.4
	1937	127	40,745	43	12	72	565.9
Colorado	1938	18	948	10	1	7	135.4
	1937	27	900	23	2	2	450.0
New Mexico	1938	579	182,293	67	18	494	369.0
	1937	665	541,861	64	27	574	944.0
Utah	1938	4	.....	3	1	0	....
	1937	4	.....	2	2	0	....
California	1938	1,265	920,851	265	7	993	927.4
	1937	1,478	617,766	314	17	1,147	538.6
Total	1938	27,149	6,810,743	6,043	1,985	19,121	356.2
Total	1937	32,560	8,091,294	6,420	2,540	23,600	342.9
Difference		5,411	1,280,551	377	555	4,479	13.3
Total	1936	25,888	6,460,140	5,295	2,068	18,525	348.7
Total	1935	21,420	5,669,934	4,911	1,401	15,108	375.3
Total	1934	18,197	4,478,701	4,312	1,373	12,512	358.0
Total	1933	12,312	3,016,502	3,312	932	8,068	373.9

Producers Meet Buyers' Demand

By JAMES McINTYRE

Crude oil production in 1938, which totaled 1,200,883,399 bbls., was 63,233,703 bbls. below the crude output of the previous year. The only reason for the decline was that crude purchasers required less oil and their estimates of demand were approved in Kansas, Oklahoma and Texas by state authorities backed by conservation laws. The production in Illinois of 15,000,000 bbls. of oil over the state's 1937 output influenced the demand for oil in Kansas and Oklahoma, and was in part responsible for the decline in those states.

The largest gain registered in any state was in California, where a large and steady foreign demand, and the development of the Wilmington field, caused an increase of 11,338,116 bbls. last year. As Wilmington alone produced 20,021,280 bbls. in excess of its 1937 figure it will be seen that as a rule California pools suffered their share of the general decline in the production in the nation. Arkansas experienced a gain of 6,176,152 bbls.; Illinois, 15,374,000 bbls.; Michigan, 2,728,181 bbls. and Louisiana, 4,527,771 bbls.

The Schuler field in Union County, Arkansas, was in the main responsible for the production increase in that state. The development of the basin fields and the discovery of new fields which were rapidly drilled gave Illinois its tremendous percentage increase, while Louisiana production was increased by discoveries of new pools and deep producing horizons in the coastal area and in the North Louisiana division.

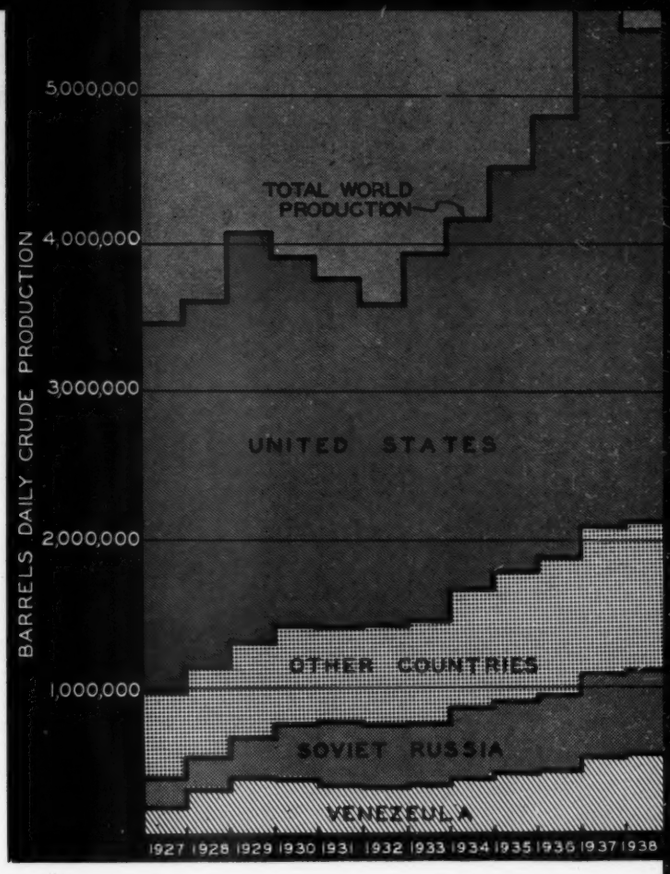
The greatest decline in production was registered in Oklahoma which fell off 53,799,592 bbls., and Texas despite its many pool discoveries, declined 32,206,889 bbls.

The Railroad Commission of Texas and the Corporation Commission of Oklahoma maintained a careful watch over production throughout the year, and big fields that can produce many times more than the figures show, were held under tight restraint. The K.M.A. pool in North Texas was a good example of this. It is a flush field with wells of large initial production, yet it was held down partly by the commission and partly by insufficient pipe line facilities to a modicum of its potential.

In sharp contrast with the production policies in Oklahoma, Kansas and Texas with the situation in Illinois where there is no legal regulation. Here, however, the buyers of crude that post prices stepped in and told the producers what their requirements were and how much crude their pipe lines would run from month to month. This resulted in a considerable quantity of "hot" oil going out into the refining trade.

Few pools were added to the major list (fields producing an average of 10,000 bbls. a day for one year). The Torrance field in California, with a total of 5,201,344 bbls. in the year; K.M.A. field in Wichita County, Texas, with 4,977,235 bbls.; Rosecrans, California, with 3,887,159 bbls. Schuler, Union County, Arkansas, with 6,193,314 bbls.,

(Continued on Page 79)



Crude oil production by countries. Data are additive to reflect total output of oil annually

LEADING FIELDS AND THEIR PRODUCTION IN 1938

	Bbls.
East Texas, Texas	148,318,837
Oklahoma City, Oklahoma	38,795,958
Rodessa, La-Ark-Tex	27,511,462
Seminole field, Oklahoma	17,329,788
Santa Fe Springs, California	12,633,748
Ventura Avenue, California	12,927,740
Midway-Sunset, California	22,869,315
Long Beach, California	20,654,617
Kettleman Hills, California	25,608,450
Thompson, Texas	13,789,233
Fitts, Oklahoma	16,655,367
Bradford, Allegany, Pa.-N. Y.	18,462,023

Production in the United States, 1929 to 1938, Inclusive

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	No. active wells Dec. 31, 1938	Dly. av. prod. per well (bbls.)
California	292,036,911	228,091,899	188,829,032	178,127,794	173,125,420	175,508,566	207,832,131	214,756,327	238,591,887	249,930,003	13,579	50.42
Oklahoma	252,229,474	216,114,591	175,703,848	149,487,234	178,356,449	178,652,012	182,596,874	200,880,705	223,106,788	*169,307,196	54,630	8.49
Texas	298,713,694	292,392,102	328,608,575	314,378,759	401,808,452	378,233,017	391,592,331	424,396,034	502,967,214	470,760,325	85,563	15.07
Arkansas	25,443,570	20,114,782	15,626,407	12,529,870	11,449,635	11,359,458	11,138,586	10,697,345	12,181,083	18,357,235	2,952	17.04
Kansas	40,658,170	42,123,347	38,956,338	35,339,206	41,305,768	45,754,117	53,364,446	57,084,490	69,158,432	58,134,090	21,195	7.51
Wyoming	19,071,618	17,740,017	14,692,272	12,994,748	11,095,729	12,488,995	13,237,765	14,268,839	19,637,218	18,956,277	3,654	14.21
Louisiana	21,137,263	23,881,270	22,856,536	22,467,889	25,629,655	32,478,282	50,286,626	80,807,016	90,427,302	94,955,073	4,911	52.97
Illinois	6,356,500	5,651,000	4,717,000	4,801,000	4,252,000	4,472,000	4,351,000	4,439,000	7,426,000	22,800,000	14,300	4.37
Pennsylvania	11,804,800	12,918,000	11,862,000	12,395,000	12,677,000	14,572,000	15,899,000	17,041,000	19,173,500	17,449,000	78,950	.60
Ohio	6,730,200	6,483,000	5,318,000	4,606,000	4,296,000	4,299,000	4,121,000	3,837,000	3,549,900	3,297,200	30,700	.29
Kentucky	7,821,400	7,462,000	6,490,000	6,322,000	4,621,000	4,868,000	5,324,000	5,638,000	5,496,500	5,834,300	14,020	1.14
W. Virginia	5,608,600	5,111,000	4,477,000	3,907,000	3,827,000	4,133,000	3,959,000	3,814,000	3,829,000	3,724,750	13,050	.78
Montana	3,827,067	3,203,808	2,847,201	2,320,155	2,358,056	3,509,015	4,367,228	5,798,661	5,799,364	4,824,917	1,753	5.75
New York	3,345,600	3,854,000	3,395,000	4,524,000	3,153,000	3,814,000	4,241,000	4,626,000	5,464,500	5,045,200	13,500	1.02
Colorado	2,361,595	1,623,639	1,492,862	1,114,064	914,881	1,130,375	1,555,542	1,612,760	1,578,391	1,324,374	194	18.70
New Mexico	1,803,261	10,377,415	15,360,383	12,344,684	13,801,278	16,438,878	20,154,321	26,647,459	38,438,072	36,008,527	2,482	39.75
Indiana	905,800	900,000	831,000	806,000	732,000	816,000	767,000	792,000	821,200	967,800	1,480	1.80
Tennessee	20,000	20,000	7,000	5,000	7,000	11,000	.....	.....	.....	.....	.....	....
Michigan	4,391,200	3,589,000	3,733,000	6,834,000	7,863,000	10,566,518	15,789,905	11,977,063	16,410,751	19,138,932	2,132	24.59
Miscellaneous	.....	.....	.....	.....	.....	.....	43,000	.....	60,000	68,200	.....	....
Total	1,004,266,723	901,740,870	845,803,454	785,304,403	901,273,323	903,104,233	990,620,755	1,089,113,699	1,264,117,102	1,200,883,399	359,045	9.16

*The production totals for Oklahoma on Page 137, are incorrect. They should read as follows: January, 16,664,475 bbls.; February, 14,342,492 bbls.; March, 15,700,911 bbls.; April, 14,612,070 bbls.; May, 13,700,078 bbls.; June, 12,723,000 bbls.; July, 13,965,562 bbls.; August, 14,250,055 bbls.; September, 13,609,200 bbls.; October, 13,565,259 bbls.; November, 12,890,160 bbls.; December, 12,183,934; total, 169,307,196 bbls.

Variation in Annual Crude Oil Production of Major Fields in United States, 1929 to 1938, Both Inclusive

Pool—	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Santa Fe Springs, California	76,477,464	44,251,396	24,272,660	22,538,036	18,268,904	14,722,264	16,158,795	16,460,142	15,749,710	12,633,748
Elwood-Goleta, California	9,435,819	14,606,307	10,470,059	5,441,626	4,918,488	4,113,644	4,559,588	4,478,732	3,206,333	2,249,495
Ventura Avenue, California	20,934,388	17,493,155	16,255,256	12,332,853	12,575,647	9,882,614	10,979,450	12,609,878	12,688,649	12,927,740
Seal Beach, California	14,418,305	8,026,796	4,882,115	4,522,489	3,987,459	3,515,457	3,380,526	3,461,067	3,415,184	3,206,135
Kern River, California	6,089,344	5,349,915	3,847,474	3,387,262	3,208,773	3,704,447	4,518,109	5,136,850	5,555,639	4,594,022
Mountain View, California	.....	.....	.....	.....	231,756	2,609,017	9,228,891	9,712,658	6,835,954	4,034,457
Midway-Sunset, California	25,310,976	23,487,147	18,728,461	17,929,036	17,540,122	19,712,566	20,239,798	21,481,621	26,492,082	22,869,315
Elk Hills, California	6,353,035	6,572,379	4,925,636	4,537,461	4,488,688	3,345,772	3,216,318	3,194,445	3,785,942	3,885,771
Coalinga, California	3,558,843	3,373,078	2,978,392	3,649,578	4,424,043	6,594,950	7,249,417	6,067,079	5,773,718	3,903,380
Brea-Olinda, California	4,813,942	4,423,266	3,626,008	3,018,125	2,964,654	3,744,538	3,611,804	2,960,753	2,656,765	2,123,223
Coyote, California	4,176,035	3,890,047	3,751,857	3,716,467	3,694,139	4,144,036	4,540,417	3,943,619	4,276,075	4,348,994
Montebello, California	3,657,922	3,712,725	2,446,052	2,162,530	1,932,596	1,980,942	2,287,385	3,204,714	3,173,522	4,151,535
Richfield, California	5,776,258	3,643,578	2,443,186	2,263,699	2,466,518	2,925,001	2,803,703	2,442,508	3,149,090	3,349,814
Huntington Beach, California	16,007,030	11,108,203	7,778,549	8,016,801	13,100,489	15,106,258	15,133,293	13,247,499	13,288,645	11,934,721
Long Beach, California	60,495,555	36,599,688	30,166,409	27,435,553	24,825,049	23,067,025	26,562,848	24,994,299	21,870,310	20,654,617
Torrance, California	5,000,218	4,116,846	2,191,781	2,281,274	2,381,875	2,525,990	2,498,442	2,859,892	2,824,849	5,201,344
Inglewood, California	8,768,101	6,429,205	5,289,125	4,869,335	4,059,972	3,376,586	4,477,044	4,546,727	5,521,459	5,340,024
Dominguez, California	3,606,850	3,694,075	4,183,052	6,823,579	6,626,615	6,655,465	7,915,850	9,712,179	9,840,769	9,760,460
Playa Del Rey, California	25,121	4,719,981	9,759,018	5,910,926	4,061,577	3,187,773	5,695,942	4,643,658	3,186,553	2,303,767
Kettleman Hills, California	1,951,786	6,209,357	16,544,824	21,959,601	21,624,020	21,393,882	27,606,817	29,295,959	29,131,362	25,608,450
Joiner, Texas	.....	29,122	37,932,810	37,131,836	58,145,564	49,345,560	55,006,571	53,421,561	55,489,391	45,727,633
Kilgore, Texas	.....	.....	43,537,815	39,086,616	63,537,717	55,200,902	58,074,728	50,290,190	51,704,986	47,264,621
Longview, Texas	.....	.....	26,257,287	45,725,947	81,186,059	73,953,949	61,991,874	61,077,122	62,043,356	55,326,124
Conroe, Texas	.....	.....	.....	2,499,645	21,286,672	17,143,444	15,269,014	14,909,126	15,157,548	11,580,239
Pecos County, Texas	41,733,955	42,603,498	27,401,174	23,654,666	20,983,060	16,443,127	16,472,495	14,003,494	12,619,943	8,458,529
Ward, South, Texas	.....	.....	.....	.....	1,133,986	2,224,603	3,745,659	4,935,566	5,620,214	3,494,885
Pampa, Texas	18,406,284	21,782,549	14,861,340	11,244,964	10,386,789	12,333,756	11,176,761	10,892,282	13,434,156	10,871,943
Chalk-Settles, Texas	14,826,190	11,188,886	9,762,304	6,668,057	5,782,469	6,238,916	6,981,618	6,744,644	5,808,748	5,167,624
Barbers Hill, Texas	4,523,350	7,865,597	8,085,278	7,383,572	8,127,939	6,866,933	6,801,590	5,496,198	4,469,771	3,477,611
Wilbarger County, Texas	10,411,183	7,867,089	4,167,464	3,361,161	2,879,742	3,057,771	2,957,849	3,161,754	3,462,226	3,218,564
Shackelford County, Texas	4,145,166	2,319,132	1,203,841	1,445,565	1,159,515	1,959,846	2,115,026	2,457,758	2,568,262	2,154,926
Electra, Texas	4,601,996	3,995,470	2,941,619	2,988,143	2,773,284	2,673,291	2,696,428	2,880,526	3,225,023	3,005,077
Archer County, Texas	6,592,594	6,023,760	4,384,656	4,057,536	4,543,939	7,023,184	6,751,948	5,395,392	4,634,806	3,848,971
Loma Novia, Texas	.....	.....	.....	.....	.....	.....	689,761	4,620,409	6,423,076	4,651,470
Hutchinson County, Texas	9,709,746	7,285,486	3,933,837	4,496,338	3,966,016	4,488,823	4,737,306	5,589,421	7,690,955	7,679,349
Big Lake, Texas	6,425,664	7,016,204	9,501,820	9,068,844	6,851,980	4,627,049	3,609,284	2,948,095	2,741,245	2,437,649
Hendrick, Texas	49,826,190	25,925,581	14,992,723	11,152,545	7,497,934	6,580,082	6,066,681	5,919,516	4,359,688	4,100,782
Luling, Texas	4,246,861	3,476,058	2,948,514	2,653,814	2,442,080	2,145,066	2,013,029	2,070,765	2,279,247	2,535,850
Hull, Texas	3,488,869	3,161,436	2,237,018	1,855,169	1,980,342	3,498,660	2,307,765	1,982,664	2,535,820	2,883,636
Spindletop, Texas	10,183,684	5,997,913	3,209,994	1,442,560	1,168,432	1,152,010	942,913	841,800	874,941	784,915
Young County, Texas	2,481,445	5,229,401	4,231,600	3,391,514	3,048,014	3,632,974	3,634,327	4,006,420	4,364,588	3,930,534
Van, Texas	122,139	7,530,222	15,542,023	17,361,174	17,271,227	14,633,277	14,265,088	12,538,424	11,479,825	5,624,755
Refugio, Texas	2,063,475	11,698,202	9,291,937	3,521,832	2,148,847	1,475,353	1,537,763	1,822,193	2,269,232	2,028,130
Darst Creek, Texas	228,876	11,343,682	7,963,694	6,080,127	4,413,259	3,348,204	3,262,328	1,680,213	2,759,230	2,747,518
Thompson, Texas	.....	.....	731,624	4,223,213	4,938,511	4,215,513	4,131,977	3,528,733	4,108,386	3,969,053
Upton-Crane, Texas	17,195,992	14,152,389	7,102,015	7,375,773	6,155,487	6,214,891	6,323,177	8,615,460	10,847,364	13,789,233
Saxet, Texas	.....	.....	9,373	154,712	821,961	713,668	1,162,222	4,585,637	12,477,593	10,740,102
Greta, Texas	.....	.....	.....	.....	1,161,074	3,961,176	4,708,780	5,583,816	4,683,044	2,542,599
St. Louis-Pearson, Maud, Okla.	36,718,245	13,194,525	8,056,449	7,368,077	8,466,897	8,525,557	8,780,671	8,884,709	7,809,458	7,776,496
Oklahoma City, Oklahoma	8,709,727	34,603,067	44,822,508	33,397,537	66,984,570	60,833,486	53,385,882	51,231,766	54,776,210	38,795,958
Edmond, Oklahoma	.....	.....	.....	.....	.....	91,953	1,478,309	4,370,495	5,884,427	2,030,282
Little River, Oklahoma	28,909,393	17,348,145	9,444,872	6,391,202	6,310,665	5,370,669	5,887,099	5,067,939	4,221,863	3,040,364
Marshall-Lovell-Crescent, Okla.	5,759,444	2,196,202	1,256,441	926,897	731,016	1,662,466	2,366,755	2,609,639	4,089,945	1,851,230
Allen, Oklahoma	8,971,530	6,579,898	3,839,577	3,255,495	3,342,983	3,065,168	2,896,745	3,076,287	2,511,447	2,475,813
Seminole City, Oklahoma	11,291,330	6,562,504	4,370,314	3,959,604	3,932,217	3,779,065	4,062,102	3,810,242	3,428,077	2,841,656
Earlsboro, Oklahoma	25,602,005	23,398,033	12,699,233	10,689,164	10,915,763	7,679,214	7,414,338	6,600,719	5,595,999	4,514,243
Bowlegs, Oklahoma	12,122,250	6,509,450	4,391,549	4,200,043	3,917,746	3,760,842	3,844,699	4,335,377	4,178,171	3,199,725
Sholem-Alechem-Tatums, Okla.	4,829,057	4,852,825	4,579,669	4,330,587	4,348,050	3,993,398	3,160,070	2,560,612	3,129,034	1,690,615
Burbank, Oklahoma	7,435,589	5,717,088	4,566,290	3,974,096	3,516,190	3,406,107	3,101,608	2,826,864	2,870,872	3,938,143
Bristow, Oklahoma	5,295,920	4,678,137	3,661,296	3,095,326	3,190,604	3,000,168	3,328,513	3,186,013	2,790,251	2,389,025
Cushing-Shamrock, Oklahoma	5,988,122	4,980,031	4,656,393	4,349,054	4,367,112	5,044,132	4,737,897	4,129,184	3,908,408	3,847,633
Healdton, Oklahoma	4,599,309	4,208,631	4,025,058	3,880,981	3,638,589	3,386,150	3,397,410	3,435,656	3,653,768	3,400,926
Fish, Oklahoma	.....	.....	.....	.....	995,658	1,381,190	3,422,342	3,113,762	2,077,047	1,223,950
Fitts, Oklahoma	.....	.....	.....	.....	.....	329,389	6,900,869	19,908,495	30,976,949	16,655,367
Lucien, Oklahoma	.....	.....	.....	.....	290,151	2,903,269	3,744,015	4,542,441	5,046,528	3,324,328
Wewoka, Oklahoma	2,409,118	1,428,714	2,844,277	1,977,067	1,647,181	1,629,124	1,323,796	1,378,538	1,120,818	848,156
South Burbank, Oklahoma	.....	.....	.....	.....	.....	2,279,191	4,216,470	5,390,399	5,579,341	3,938,143
Eldorado-Augusta, Kansas	9,272,141	9,099,075	7,769,394	6,684,285	5,947,371	7,196,558	6,712,349	6,163,823	5,989,436	5,693,802
Rice County, Kansas	290,863	267,894	450,562	858,105	1,935,996	3,905,132	8,069,022	11,427,064	15,253,335	10,703,436
Russell County, Kansas	1,178,211	1,994,610	1,108,745	933,198	1,067,291	2,548,006	4,146,086	7,074,226	11,378,563	6,275,949
McPherson County, Kansas	.....	5,604,670	9,184,393	7,748,212	11,763,473	9,869,841	6,975,064	4,464,439	4,450,978	3,840,774
Caillou Island, Louisiana	.....	.....	.....	.....	338,576	1,355,288	2,872,415	5,232,961	6,290,800	6,395,180
Gillis, Louisiana	.....	.....	.....	.....	.....	46,727	2,172,351	5,653,087	5,083,156	3,163,248
Rodessa, Louisiana-Texas-Arkansas	.....	.....	.....	.....	.....	.....	1,326,116	22,066,361	31,757,814	27,511,462
Caddo, Louisiana	4,652,047	4,379,614	3,345,157	2,617,094	2,282,948	2,243,704	1,574,060	2,394,818	2,363,804	2,365,656
Bosco, Louisiana	.....	.....	.....	.....	.....	1,014,144	6,356,368	4,621,671	3,031,370	2,084,536
Leesville, Louisiana	.....	.....	153,134	276,009	370,377	4,230,753	5,012,492	4,996,628	3,072,140	1,863,035
Iowa, Louisiana	.....	.....	17,312	466,164	3,370,962	5,311,703	7,249,167	6,648,058	6,235,381	5,643,319
Smackover, Arkansas	19,666,126	18,755,335	12,044,935	9,716,628	8,897,531	8,019,709	7,433,432	7,265,767	6,917,464	6,543,519
Salt Creek, Wyoming	11,365,322	10,517,980	8,846,658	7,918,399	7,026,294	6,597,796	6,389,780	6,014,134	5,952,821	5,659,874
Hobbs, New Mexico	740,165	9,459,319	14,596,714	11,768,252	11,210,908	12,437,853	11,062,508	9,043,343	7,310,713	5,039,849
Eunice, New Mexico	.....	.....	.....	347,413	265,290	905,276	3,259,362	8,140,177	11,043,117	8,966,399
Bradford-Allegany, Pa.-N. Y.	11,274,000	12,249,065	11,419,000	12,682,124	12,500,513	13,791,617	16,376,668	16,352,000	20,421,885	18,462,023
Monument, New Mexico	.....	.....	.....	.....	.....	.....	.....	3,576,317	10,968,485	9,451,048
Lance Creek, Wyoming	.....	.....	.....	.....	.....	.....	.....	1,813,991	4,290,301	4,655,349
Lafitte, Louisiana	.....	.....	.....	.....	.....	.....	.....	2,386,062	4,105,393	5,951,591
New Iberia, Louisiana	.....	.....	.....	.....	.....	.....	.....	2,172,369	5,932,212	5,347,124
Government Wells, Texas	.....	.....	.....	.....	.....	.....	.....	5,819,552	5,694,040	4,131,226
Anahuac, Texas	.....	.....	.....	.....	.....	.....	.....	2,662,187	4,352,378	2,830,645
Hastings, Texas	.....	.....	.....	.....	.....	.....	.....	2,409,977	5,717,164	6,966,128
Plymouth, Texas	.....	.....	.....	.....	.....	.....	.....	3,330,122	5,019,987	4,477,864
Tomoconnor, Texas	.....	.....	.....	.....	.....	.....	.....	1,324,537	4,502,528	4,423,458
Talco, Texas	.....	.....	.....	.....	.....	.....	.....	1,453,694	9,926,024	9,498,955
K.M.A., Texas	.....	.....	.....	.....	.....	.....	.....	726,153	1,064,971	4,977,235
Olympic, Oklahoma	.....	.....	.....	.....	.....	.....	.....	2,710,620	4,315,466	1,888,833
Moore, Oklahoma	.....	.....	.....	.....	.....	.....	.....	542,891	3,895,797	1,756,230
Mount Poso, California	.....	.....	.....	.....	.....	.....	.....	6,747,210	6,723,416	6,234,068
Round Mountain, California	.....	.....	.....	.....	.....	.....	.....	3,955,379	4,857,582	5,484,304
Santa Maria, California	.....	.....	.....	.....	.....	.....	.....	1,668,734	3,908,005	6,145,597
El Segundo, California	.....	.....	.....	.....	.....	.....	.....	149,149	3,642,486	3,887,159
Rosecrans, California	.....	.....	.....	.....	.....	.....	.....	803,811	1,252,519	3,723,567
Schuler, Arkansas	.....	.....	.....	.....	.....	.....	.....	.....	1,197,090	6,193,314
Buckeye, Michigan	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,346,607
North Belridge, California	.....	.....	.....	.....	.....	.....	.....	3,916,963	5,699,911	4,869,338
Wilmington, California	.....	.....	.....	.....	.....	.....	.....	.....	14,181,162	34,202,442

joined the select list. More fields dropped out of it than were added to it. Big fields like East Texas, Oklahoma City, Rodessa, Santa Fe Springs, Midway-Sunset, Seminole fields, and Kettleman Hills all show a decline.

The highest average production per well in the United States was in Louisiana, 52.97 bbls. per day per well. California wells averaged 50.42 bbls. per well per day.

The influence of a few big fields upon the whole production of the country is seen in the record of 20 of the largest fields which last year produced a total of 476,969,642 bbls. or 39 per cent of the total.

1938 COMPLETIONS

(Continued from Page 76)

per day up to 15,240 bbls. per day in initial production. Like nearly all Wilcox sand pools in the northern part of the state, the productive acreage was not large, but the 17 wells in the field up to the end of the year produced 173,979 bbls. in combined initial production, which promises a very rich per-acre yield.

The busiest area in the state for most of the year was in and around the old St. Louis district in Pottawatomie County. The Seminole area generally was very active, and wildcatters opened 18 oil or gas fields in Okfuskee, Hughes, Seminole, and Pottawatomie counties. The Cement area in Caddo, another ancient field, was given a western extension by a 3,500-bbl. well, the largest ever completed in that area at the time it came in. A 10,000-bbl. well was completed in October, and some tremendous gas wells were added. Some of these gas wells were good for 100,000,000 feet per day.

The Sac and Fox pool had its best year. It was opened by the Wilcox Oil & Gas Co. in 1925; but because leases were soon to expire, 50 wells were completed there in 1938. Deep development in the Fox area in Carter County was necessarily slow, but some good wells were developed. The most westerly pool in the northern end of the state was opened in Garfield County, in Section 4-24-8w, by a 600-bbl. well in Wilcox sand.

Illinois

Seventeen pools were opened in Illinois and one of these was still in the ascendancy at the close of the year. This was the Salem or Lake Centralia field in Marion County, opened by the Texas Co. in June on the Tate farm in Section 5-1n-2e. The well produced 732 bbls. in 23 hours from Benoist sand. The Salem field was a real major discovery and was developed rapidly by the various leaseholders led by the Texas Co., the largest lease owner. The pool was producing in excess of 50,000 bbls. a day at the close of the year. The Centralia field, in Clinton and Marion counties, which was one of the busiest fields in 1937, was completely drilled up last year.

The Louden field, also a 1937 discovery, was the scene of great activity led by the Carter Oil Co., the largest lease owner. Meanwhile, Clay and Richland counties, in the deep part of the Illinois basin, were very active. New pools were opened in Clay, Marion, Richland, Jefferson, Wayne and Fayette counties, but notwithstanding that operations were pursued in 44 counties in the state, wildcatters did not succeed in adding any producing counties last year.

Two basin pools were opened in Posey County and Gibson County, Indiana, in the course of the year, both McClosky lime producers, and the discovery of oil in the McClosky lime in Henderson and Daviess counties, near Birk City, in western Kentucky gave the Owensboro-Henderson area a brief but very interesting boom. The Birk City pool was followed by the Spottsville pool in Henderson County.

Gulf Coast

South Louisiana rather overshadowed South Texas in successes in the Gulf Coast area last year. On the Texas side of the big district 12 pools were opened, while in South Louisiana 20 pools were brought into existence. The top of the pay in the discovery wells on the Texas side averaged 6,364 feet, while the average top in the Louisiana discoveries was 8,210 feet. One wildcat in Terrebonne Parish got a 400-bbl. production at 11,172-78 feet, another in the same parish found pay at 13,254-66 feet and a third in La Fourche Parish found a 720-bbl. production at 10,183-207 feet. Another Terrebonne Parish well was good for 450 bbls. from 10,300-05 feet. Such great depths call for relatively slow and careful drilling and the development of the new pools was carried on conservatively. Only 49 wells were drilled in the 20 new pools by the close of the year. On the Texas side, with the exception of the Fairbanks field in Harris County, where 113 wells were drilled, conservatism reigned in the new pools as only 59 wells were completed by the end of the year in 11 of the pools.

West Texas

Twelve pools were opened in West Texas in Pecos, Crockett, Crane, Cochran, Gaines, Yoakum Andrews, Stonewall, Reeves and Garza counties. The largest of the discovery wells opened the Emma pool in Andrews County with a 1,062-bbl. production. One hundred and six wells had been drilled in the dozen new pools by the close of the year. Notable extensions were made to already established pools, the most important having been the linking of the Wasson pool in Gaines County to the Denver pool in Yoakum County, with prospects of adding the Bennett pool to the chain this year. The Dunes pool, a 1938 discovery in Crane County, was regarded as the most important of the year's finds in the Permian Basin. North of the West Texas district, in the Panhandle, two gas fields in Gray and Sherman counties and an oil pool in Carson County were opened. The oil discovery produced 484 bbls. the first day. No other wells were drilled in the new pools last year.

North-Central Texas

In the North Texas and Central Texas districts wildcatters opened pools in Jack, Archer, Wilbarger, Cooke and Wichita counties in the first-named area, and in Shackelford, Jones, Callahan, Haskell, Stephens, Runnells, Young, Fisher, Eastland, Brown, Coleman, Throckmorton and Scurry counties, in the Central area. Some of the discoveries in West Central Texas were new pays in old fields. The largest of the discovery wells was a 2,000-bbl. producer that opened the Holliday pool in Archer County from Canyon sand. Ten pools were opened in Jones County alone. Unlike the Gulf Coast discoveries, the new fields of Central Texas average about 2,800 feet in depth to the top of the pay, while the new pools in North Texas average about 3,600 feet to the top of the pay. Most of the West Central pools were opened in one or another sands and limes in the Canyon and upper Strawn series, which, while usually prolific, are not very extensive in area. In the North Texas area the extensive development of the K.M.A. deep pay and the opening of the Hull-Silk pool in northern Archer County stood out. The latter pool has three producing horizons. K.M.A. started off the year with 89 oil wells and ended the year with 878, which had proven up about 70,000 acres, making it one of the largest fields in area in the world.

Southwest Texas

In Southwest Texas the most impressive feature of the year was the opening of a series of pools along the Jackson trend. Outstanding new pools were opened in Jim Wells, Starr and Refugio counties on the Frio-Vicksburg part of the Jackson trend. Forty-four wildcat wells succeeded in finding oil, gas or distillate.

North-Louisiana Arkansas

Four pools were opened in North Louisiana in Caddo, Sabine and Webster parishes. The discovery wells averaged 688 bbls. per day in initial production. All three Arkansas discoveries were in Columbia County and all were Smackover lime wells with an average initial of over 700 bbls. The opening of production at Shreveport's door made that city feel more like an oil center than ever. Production was obtained from the Pettit lime of the lower Glen Rose formation at 5,549-70 feet and the first well flowed 499 bbls. per day. Seven wells were completed by the end of the year. The Blue Lake pool and the Cotton Valley D sands and Bodcaw oil sand were the other finds of the year.

Rocky Mountain Area

In the Rocky Mountain division, two fields were opened in Wyoming, one a major discovery on the Cole Creek structure, 14 miles northeast of Casper. The other new pool was in Albany County. A 55,000,000-cu. ft. gas well opened a field 12 miles north of Big Medicine Bow. The sole discovery in Colorado was on the Wilson Creek structure in La Blanca County. The well flowed 492 bbls. of 46-gravity paraffin-base oil. The Clay basin gas field in Daggett County, Utah, was extended by two wells. One discovery was made in Montana 4½ miles north of the Cut Bank field. The well swabbed 187 bbls. the first day. In Lea County, New Mexico, 15 pools were extended and a new field opened 5 miles west of the Eunice area. The first well produced 127 bbls. in six hours on the pump. A gas field was opened in the Lovington area, also in Lea County.

California

The most important new pool in California was in the Southeast Coalinga area in Fresno County opened by a 9,000-bbl. well in Section 18-20-16. It also produced 10,000,000 cu. ft. of gas. The Tupman field in Kern County was opened in November by a well starting at 3,752 bbls. of oil and 18,000,000 feet of gas per day at a total depth of 8,677 feet. The Coles Levee field, also in Kern County, was opened in November, the initial well flowing 732 bbls. of oil and 5,700,000 cu. ft. of gas. The discovery well in the Canfield Ranch pool in Kern County started at 800 bbls. per day. The deepest producing area in California was opened in Kern County and was named the Wasco field. Production is taken from the 13,000-foot level but engineers believe there is substantial production to be found below 15,000 feet. The discovery well in the Wasco field started at 2,900 bbls. a day but a later well produced 6,528 bbls. per day.

The Aliso Canyon field in Los Angeles County opened in October by a 1,000-bbl. well in Section 27-3-16 produces 23-gravity oil. Deep zone discoveries and field extensions rounded off a successful year of exploration.

Completions of the year included 993 oil wells, seven gas wells and 265 dry holes.

Michigan

Seven pools were opened in Michigan last year, the Freeman-Redding, in Clare County, and the Bloomingdale, in Van Buren County, standing out in importance. Five of the discoveries were in the southwestern part of the state in Van Buren and Allegan counties. The Edenville discovery was in Midland County. Production increased in the state, as 566 new oil wells, averaging 450 bbls. initial production per well, were developed.

Few Products Escaped Price Decline Which Swept Oil Markets in 1938

By T. F. SMILEY

Average refinery prices for oil products in 1938 were, with few exceptions, lower than those recorded in 1937. Just one in the Oklahoma list selected for comparisons deviated from the rule. It was 200-viscosity 3-color neutral, and it gained its distinction by being .0004 cent a gallon higher than it had been in the preceding year. Its hold on even this slender honor was none too secure, for it is a matter of common knowledge that a large proportion of the lubricants sold in the interior states during 1938 went at deeply slashed prices.

Profits in refining were confined largely to those operators who enjoyed special advantages in regard to transportation costs for crude oil or refinery products or who were in a position to purchase crude under the market. Conditions were particularly unsatisfactory for a number of inland refiners whose profits if any are dependent on the manufacturing margin between the delivered price of crude oil and the prices received at their plants for the finished products.

The season of heavy gasoline consumption, normally the one in which refiners expect to make up for unprofitable operations in other months, meant little in 1938. Gallonage was even better than commonly had been predicted, but prices throughout the entire year were below the point attained in the corresponding period of 1937. The average price in Oklahoma for the regular grade, .0503 cents, compares with .0582 cents in 1937 and .0588 cents in 1936.

The gasoline market started out under a handicap of hugely excessive stocks. Those of 1937, which had proved extremely burdensome, looked small by comparison with the immense volume piled up in the first three months of 1938. In March the accumulation had reached the unprecedented height of 92,312,000 bbls.

Although the industry had the hard lesson of 1937 before it, crude runs to stills, instead of being sharply reduced, were kept at a much higher point during the early part of the year than they had been in 1937.

Tankcar prices for gasoline maintained a fairly satisfactory level on the Atlantic Coast, but those in the interior country often failed to cover cost of manufacture. Refiners without adequate financial resources were obliged to shut down. That helped to reduce production, but not until November did the nation's gasoline stocks drop to a point recorded in the comparable period of 1937. By that time the season of heavy consumption was over, other unfavorable factors were at work, and refinery prices had become bogged for the remainder of the year.

Although natural gasoline manufacturers fared better than refiners, they too had their bad days. Starting in January, their product in Oklahoma and Texas took a perpendicular drop, the 26-70 grade declining from 3 cents to 2. It recovered half of this loss, but in May it tumbled precipitately again to the former low mark, where it stayed for a month. Low prices of motor fuels and distress stocks of natural combined to keep the latter product creeping along at about 1½ cents less than it had commanded the year before. The average tankcar price of 26-70 in Oklahoma was .0271 cents, compared with .0367 cents in 1937. California natural suffered fewer vicissitudes. Its one grade dropped from 6½ cents to 6¼ cents in July and stayed at the latter figure the rest of the year.

Heavy industrial fuel had a troubled year. Bureau of Mines statistics include this residual product under the head of "gas and fuel oil stocks." Its figures reveal that these stocks, which in January totaled about 118,800,000 bbls., mounted to 154,666,000 bbls. in November. While part of this huge accumulation was made up of the lighter burning oils, most of it was the low-grade fuel used by railroads, mills, factories and ocean vessels. Depressed business conditions curtailed operations in all these lines, with the result that midyear saw storage facilities for heavy fuels overtaxed and buyers able to name their own prices. Toward the end of the year, with general conditions improving, big inroads were made on stocks, and prices were becoming steadier. In sharp contrast with conditions in 1938, there was pronounced scarcity of industrial fuel in the early part of the preceding year.

The lubricants traveled a hard road. Price-cutting in the Mid-Continent area was spreading in January, and by March it had become rampant. A few refiners with established trade built on the reputation of their products refused to lower either their prices or their standard of quality; and their quotations, with few changes throughout the entire year, are published as the ruling ones. Right up to the close of December, however, a steady stream of neutrals and bright stocks was moving to consuming points at substantial concessions from published prices. In Pennsylvania the average price of 10- to 15-pourpoint bright stock, used for purposes of comparison, fell from .2422 cents a gallon in 1937 to .1671 cents in 1938.

As the year ended refiners were manifesting concern over the outlook for light fuels. As a result of exceptionally mild temperatures in most regions stocks were assuming disquieting proportions. Along the East Coast prices were firm as the year closed, but inventories were backing up at refineries in the interior areas, with consequent shaving of prices by refiners with limited storage facilities.

Notwithstanding crude oil stocks were in better position at the close of 1938 than they had been in about 18 years, the market throughout the year was unsettled and prices declined.

AVERAGE YEARLY PRICES ON MOST IMPORTANT REFINERY PRODUCTS, 1929 TO JANUARY 1, 1939

(Prices in Tankcar at Plant)

OKLAHOMA

	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929
U. S. Motor gasoline (regular grade), per gal.	$.0503	$.0582	$.0588	$.0492	$.0444	$.0363	$.0392	$.0345	$.0634	$.0775
Natural gasoline, 26-70 (AA grade), per gal.	.0271	.0367	.0361	.0320	.0260	.0290	.0222	.0301	.0524	.0683
41-43 water white kerosene, per gal.	.0407	.0413	.0365	.0353	.0322	.0279	.0315	.0231	.0358	.0517
Below 14-gravity fuel oil, per bbl.	.5509	.7780	.6619	.6232	.5930	.3899	.3250	.2904	.5225	.5260
U.G.I. gas oil, per gal.	.0208	.0289	.0251	.0233	.0201	.0146	.0146	.0127	.0227	.0265
200 vis. neutral, 3 color, per gal. (15-20 pourpoint)	.1000	.0996	.1043	.1075	.0994	.0845	.0834	.0924	.1059	.0966
150-160 D color bright stock, per gal.	.1491	.1859	.1769	.1496	.2030	.1852	.1837	.1631	.2977	.3368
124-126 wax, per lb.	.0230	.0286	.0245	.0224	.0346	.0253	.0170	.0174	.0216	.0321
Crude (36. A.P.I. gravity), per barrel	1.19	1.21	1.10	1.00	1.00	.62	.88	.63	1.23	1.37

CALIFORNIA

	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929
U. S. Motor gasoline, per gal. (low octane)	$.0677	$.0737	$.0602	$.0552	$.0624	$.0523	$.0546	$.0510	$.0806	$.0849
Natural gasoline, 75-85, 375 e.p., per gal.	.0639	.0676	.0617	.0506	.0575	.0462	.0447	.0418	.0712	.0803
38-43 kerosene, per gal.	.0510	.0432	.0339	.0409	.0458	.0384	.0398	.0425	.0455	.0569
27 plus Diesel*	1.19	1.175	1.035	1.084	1.032	.8406	.7432	.7510	.8365	.9000
Crude (25 A.P.I. gravity, Signal Hill), per barrel	1.03	1.03	.997	.85	.94	.84	.83	.76	1.16	1.105

PENNSYLVANIA

	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929
U. S. Motor gasoline, per gal. (below 60 octane)	$.0487	$.0544	$.0565	$.0521	$.0519	$.0505	$.0568	$.049	$.0737	$.0905
45 water white kerosene, per gal.	.0501	.0507	.0504	.0467	.0448	.0446	.0451	.04	.0501	.0651
Bright stock, 10-15 pourpoint, per gal.	.1671	.2422	.2361	.1990	.2540	.2407	.2466	.2094	.3373	.4745
Crude (in National Transit Lines), per barrel	1.89	2.64	2.42	2.17	2.47	1.86	1.88	1.81	2.55	3.69

*1936, 1937 and 1938 prices are on 24 plus Diesel.

AVERAGE DOMESTIC AND EXPORT REFINED PRICES OVER PAST THREE YEARS

(QUOTATIONS F.O.B. PLANTS AND TERMINALS)

	1938					1937					1936				
GASOLINES—															
Oklahoma (Group 3):	Av. pr.			1st	2nd	Av. pr.			1st	2nd	Av. pr.			1st	2nd
U. S. Motor grades:	for yr.	High	Low	6 mos.	6 mos.	for yr.	High	Low	6 mos.	6 mos.	for yr.	High	Low	6 mos.	6 mos.
Regular, 70-72 octane	.0503	.0550	.0437	.0510	.0496	.0582	.06⅛	.05	.0594	.0570	.0588	.06⅛	.05½	.0601	.0575
Third grade, below 62 octane	.0415	.0475	.0337	.0417	.0414	.0475	.05⅛	.04	.0488	.0462	.0485	.05¼	.04½	.0498	.0472
60-62 400 (below 60 octane)	.0415	.0475	.0337	.0417	.0414	.0475	.05⅛	.04	.0488	.0462	.0485	.05¼	.04½	.0498	.0472
64-66 375	.0454	.0475	.0400	.0465	.0442	.0504	.05¼	.04½	.0513	.0495	.0502	.05⅜	.04⅞	.0525	.0491
North Texas:															
U. S. Motor, below 62 octane	.0416	.0475	.0337	.0418	.0414	.0475	.05⅛	.04	.0487	.0462	.0485	.05¼	.04⅝	.0496	.0474
64-66 375	.0457	.0500	.0400	.0465	.0449	.0499	.05¼	.04½	.0505	.0494	.0506	.05¼	.04⅞	.0521	.0492
Pennsylvania:															
U. S. Motor, below 60 octane	.0487	.0525	.0425	.0488	.0486	.0544	.06	.04½	.0528	.0559	.0565	.05⅞	.05¼	.0562	.0568
California:															
54-58, U. S. Motor	.0677	.0750	.0650	.0690	.0664	.0737	.07½	.07	.0725	.0750	.0602	.07	.03¾	.0504	.0700
New York (Bayonne, N. J.):															
U. S. Motor, below 65 octane	.0629	.0700	.0600	.0652	.0607	.0713	.07½	.06½	.0692	.0733	.0673	.07	.06½	.0688	.0658
65 octane and above	.0666	.0712	.0650	.0673	.0658	.0745	.08	.06¾	.0721	.0769	.0698	.07¼	.06¾	.0713	.0683
Gulf Coast (domestic):															
U. S. Motor, below 65 octane	.0500	.0537	.0450	.0525	.0476	.0598	.06½	.05⅝	.0587	.0609	.0581	.06	.06⅜	.0576	.0585
U. S. Motor, 65 octane and above	.0523	.0550	.0462	.0549	.0498	.0620	.06½	.05½	.0619	.0620	.0600	.06⅛	.05⅝	.0596	.0604
NAPHTHAS—															
Pennsylvania:															
52-56 450 (blending)	.0471	.0525	.0425	.0467	.0475	.0532	.05⅞	.04⅜	.0514	.0551	.0550	.05¾	.05⅛	.0550	.0551
NATURAL GASOLINES—															
Oklahoma (Group 3):															
Grade 26-70	.0271	.0375	.0200	.0236	.0305	.0367	.04½	.03	.0337	.0397	.0361	.04¾	.02½	.0310	.0411
Grade 18-55	.0317	.0437	.0237	.0280	.0353	.0439	.05⅜	.03½	.0405	.0473	.0431	.05⅝	.03	.0375	.0487
California:															
75-85 375-390	.0639	.0675	.0625	.0650	.0627	.0676	.07	.06¾	.0677	.0675	.0617	.07	.04¾	.0533	.0700
KEROSENE—															
Oklahoma (Group 3):															
41-43 water white	.0407	.0425	.0387	.0415	.0398	.0413	.04¼	.03⅞	.0416	.0410	.0365	.04½	.03⅛	.0394	.0336
North Texas:															
41-43 water white	.0407	.0425	.0387	.0415	.0399	.0417	.04⅜	.03⅞	.0422	.0412	.0369	.04⅜	.03⅛	.0397	.0341
Pennsylvania:															
45 water white	.0501	.0550	.0462	.0517	.0485	.0507	.05½	.04⅝	.0490	.0524	.0504	.05½	.04½	0529	.0478
California:															
38-43 high burning test	.0510	.0600	.0475	.0530	.0490	.0432	.05½	.03¼	.0384	.0480	.0339	.04	.03¼	.0331	.0347
New York (Bayonne, N. J.):															
41-43 water white	.0515	.0630	.0462	.0567	.0462	.0573	.06 3/10	.05	.0556	.0590	.0486	.05¼	.04⅝	.0502	.0470
Gulf Coast:															
41-43 water white	.0428	.0500	.0387	.0461	.0395	.0508	.05½	.03¾	.0508	.0507	.0400	.04¾	.03⅞	.0405	.0396
FURNACE OILS AND TRACTOR FUELS—															
Oklahoma (Group 3):															
32-36, No. 2 straw	.0350	.0387	.0300	.0351	.0349	.0355	.03⅞	.03¼	.0348	.0363	.0313	.03⅝	.02¾	.0322	.0304
38-40, No. 1 straw	.0368	.0400	.0350	.0377	.0359	.0372	.04	.03⅝	.0369	.0375	.0329	.03⅝	.02⅞	.0342	.0316
38-42, No. 1 prime white	.0381	.0412	.0362	.0390	.0373	.0392	.04⅛	.03¾	.0389	.0396	.0343	.03⅞	.03	.0360	.0326
New York (Bayonne, N. J.):															
No. 1	.0514	.0630	.0450	.0578	.0450	.0588	.06 3/10	.05½	.0574	.0602	.0484	.05¼	.04½	.0503	.0466
No. 4	.0439	.0525	.0400	.0478	.0400	.0503	.05¼	.04½	.0488	.0519	.0389	.04½	.03½	.0418	.0361
GAS OIL, DIESEL OIL AND FUEL OIL—															
Oklahoma (Group 3):															
U.G.I. gas oil	.0280	.0287	.0262	.0275	.0285	.0289	.03⅛	.02¾	.0280	.0298	.0251	.02⅞	.02⅛	.0241	.0261
Below 14 fuel oil, industrial	.5509	.70	.50	.5961	.5058	.7780	.80	.70	.7831	.7730	.6619	.70	.60	.6288	.6950
California:															
24 plus Diesel, per bbl.	1.19	1.50	1.00	1.32	1.05	1.18	1.50	1.00	1.08	1.29	1.035	1.10	1.00	1.07	1.00
New York (Bayonne, N. J.):															
28-30 Diesel (lighterage 6¼ cents bbl.)	1.84	2.20	1.75	1.93	1.75	2.08	2.20	1.65	1.95	2.20	1.65	1.65	1.65	1.65	1.65
Bunker C (New York Harbor)	1.05	1.25	.95	1.14	.95	1.27	1.35	1.15	1.22	1.31	1.08	1.15	1.05	1.05	1.11
NEUTRAL OILS—															
Oklahoma (Group 3):															
200, 3 color, 15-20 pourpoint	.1000	.10	.10	.1000	.1000	.0996	.10	.09½	.0992	.1000	.1043	.10¾	.09½	.1075	.1012
Pennsylvania:															
200, 3 color, 10 pourpoint	.1714	.20	.1350	.1784	.1644	.2567	.29	.21	.2663	.2471	.2281	.24½	.21½	.2269	.2294
Gulf Coast:															
200, 3 pale oil	.0700	.07	.07	.0700	.0700	.0696	.07	.06½	.0692	.0700	.0672	.07	.06½	.0694	.0650
200, 5-6 red oil	.0719	.0725	.0725	.0725	.0712	.0714	.07¼	.06¾	.0702	.0725	.0675	.07	.06½	.0694	.0655
California:															
200, 2½-3 pale oil	.0719	.0750	.0725	.0725	.0712	.0708	.07¼	.06¼	.0697	.0718	.0646	.07¼	.06¼	.0667	.0625
BRIGHT AND STEAM REFINED STOCKS—															
Oklahoma (Group 3):															
150-160, zero to 10, D color	.1491	.16	.1425	.1554	.1428	.1859	.20	.16	.1938	.1781	.1769	.18½	.17	.1756	.1783
631 green (treated), S.R.	.1299	.1350	.1250	.1348	.1250	.1583	.17½	.13	.1619	.1546	.1267	.14	.09½	.1179	.1354
Pennsylvania:															
600 S.R.	.0815	.0850	.07	.0827	.0803	.1374	.17½	.07	.1617	.1131	.1238	.13½	.09½	.1157	.1320
Bright stock, 10 pourpoint	.1671	.1850	.1500	.1721	.1621	.2422	.28	.18	.2694	.2150	.2361	.24½	.22	.2298	.2425
WAX—															
Oklahoma (Group 3):															
124-126 (crude scale)	.0230	.0300	.0212	.0234	.0226	.0286	.03	.02⅝	.0272	.0300	.0245	.02¾	.02¼	.0245	.0245
New York (Bayonne, N. J.):															
125-127 (a.m.p.)	.0431	.0455	.0435	.0441	.0421	.0455	.0455	.0455	.0455	.0455	.0455	.0455	.0453	.0455	.0455
EXPORT PRICES—															
Gasoline—Gulf Coast:															
U. S. Motor	.0481	.0537	.0437	.0482	.0470	.0576	.06⅛	.05¼	.0563	.0588	.0528	.05½	.05	.0531	.0525
64-66 375	.0510	.0575	.0450	.0522	.0498	.0606	.06⅜	.05⅝	.0597	.0615	.0560	.05¾	.05⅜	.0567	.0554
Los Angeles, Calif.:															
U. S. Motor, 55-65 octane	.0521	.0575	.0500	.0539	.0502	.0503	.06	.04¾	.0475	.0531	.0450	.04¾	.04	.0429	.0470
U. S. Motor, 65-69 octane	.0559	.0625	.0525	.0589	.0529	.0531	.06¼	.05	.0500	.0561	.0475	.05	.04¼	.0454	.0495
Lubricants—New York (f.a.s. in bbls.):															
600 S.R. unfiltered	.1607	.1650	.1550	.1613	.1600	.2170	.24	.16½	.2284	.2056	.1898	.20	.16½	.1813	.1984
Bright stock, No. 8 color	.1914	.2350	.1625	.2203	.1625	.2994	.32	.23½	.3082	.2906	.2749	.29½	.26	.2633	.2865

Retail Gasoline Prices Depressed by Demoralized Marketing Conditions

By T. F. SMILEY

Motorists using regular-grade gasoline paid an average of 13.91 cents a gallon for it in 1938, according to records of retail prices obtaining in 50 representative cities of the United States. On top of this they handed the service-station attendant varying amounts by way of federal, state, county, and city taxes.

The 50-city average in 1937 was 14.40 cents. The drop of .49 cent is ascribable to various unfavorable conditions. Price wars demoralized retail gasoline business in many areas. Especially savage price-cutting was witnessed in the Kansas City, Mo., district, where for a time it was possible to get regular-grade motor fuel for 12 cents a gallon, including the 4-cent tax. As the year ended, service stations were posting 16 to 17 cents, including tax, for the regular grade; but few, if any, motorists were paying that. For there was little pretense of secrecy over the fact that a discount of 3 cents was obtainable to all comers. Similar price manipulations were seen in other parts of the country.

The conditions in the Kansas City area became so chaotic that shortly before the close of the year, at the request of the Petroleum Retailers Association, an investigation was started by the attorney general's office in Washington. As posted prices—not those prevailing under thinly covered discount allowances—are used in statistical records, it is apparent that car owners in some parts of the country got their motor fuel for substantially less than is indicated by available figures.

The 50-city average was 14.08 in January, 1938. It stayed close to that mark for the first eight months. Then it began to slip, and it continued its downward course to the end of the year, where it closed at 13.27. It is necessary to go back to 1934 to find another December average so low. In that same year an all-time low for November was established in the 50-city average, 11.92 cents. Then, as in the year just closed, price wars and the race for gallonage destroyed profits, bringing pump prices to a level which in some cases did not even cover manufacturing and selling costs.

The average for 1938, 13.91 cents, was the lowest since 1935, when 13.55 cents was recorded. The 50-city average price on January 1, 1939, was 13.51 cents, compared with 14.08 cents on January 1, 1938.

The lowest price recorded in the official figures was in Wichita, Kans., where during the whole second half of the year the motorist got his tank filled at 14.1 cents a gallon, including 4 cents tax. That city was one of the hotbeds of competition.

Year-to-Year Trend of Retail Gasoline Prices

Average Service Station Prices in Cents in 50 Representative Cities, Exclusive of Tax

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
January 1	18.32	17.23	14.56	12.87	12.54	14.32	12.90	13.70	14.09	14.08
February 1	17.59	16.96	14.83	12.97	11.63	13.87	13.16	14.21	14.10	14.07
March 1	17.21	16.28	14 86	12.91	11.49	14.18	13.22	14.22	14.46	13.99
April 1	17.38	15.92	13.68	13.18	11.58	13.57	13.28	13.87	14.47	14.12
May 1	17.48	16.95	12.40	13.59	11.60	13.55	13.64	14.27	14.55	14.08
June 1	18.32	17.01	12.21	13.68	10.82	13.93	13.90	14.31	14.58	14.05
July 1	18.48	16.56	12.46	14.21	13.06	14.06	14.00	14.26	14.42	14.08
August 1	18.22	16.47	12.41	14.02	13.52	13.98	14.10	14.24	14.54	14.08
September 1	18.22	16.26	12.21	13.65	14.00	13.89	13.78	14.21	14.53	13.97
October 1	18.32	15.93	12.34	12.46	14.45	13.55	13.42	14.07	14.49	13.75
November 1	17.84	15.41	12.32	13.04	14.30	11.92	13.46	13.99	14.45	13.39
December 1	17.51	14.96	12.89	12.96	14.17	12.43	13.69	13.97	14.13	13.27
Average	17.91	16.33	13.09	13.30	12.76	13.60	13.55	14.11	14.40	13.91

Comparison of Net Service Station Prices January 1, 1938, and January 1, 1939

Atlantic and New England States

	Jan. 1 1938	Jan. 1 1939
Portland Me.	13.0	11.7
Burlington, Vt.	13.0	13.2
Hartford, Conn.	13.1	11.0
Springfield, Mass.	13.0	11.0
New York, N. Y.	13.5	11.4
Philadelphia, Pa.	11.75	13.25
Providence, R. I.	12.8	11.0
Newark, N. J.	12.25	12.4
Baltimore, Md.	12.75	12.25
Dover, Del.	13.0	12.0
Washington, D. C.	13.0	13.0
Average	12.83	12.02

Central

Fargo, N. D.	14.7	14.7
Huron, S. D.	14.1	14.0
Wichita, Kans.	11.9	10.1
Omaha, Neb.	13.7	13.5
Tulsa, Okla.	14.0	12.0
Dallas, Tex.	13.5	13.0
Little Rock, Ark.	13.75	12.75
Kansas City, Mo.	12.6	12.9
Des Moines, Iowa	13.1	12.9
Duluth, Minn.	14.0	13.9
Minneapolis, Minn.	13.7	12.0
Milwaukee, Wis.	13.5	13.3
Chicago, Ill.	12.8	12.6
Peoria, Ill.	13.3	13.1
Detroit, Mich.	13.1	12.8
Indianapolis, Ind.	13.9	13.8
Cleveland, Ohio	13.5	13.0
Average	13.48	12.96

Southeastern

	Jan. 1 1938	Jan. 1 1939
Norfolk, Va.	13.75	13.25
Charleston, W. Va.	14.55	14.05
Louisville, Ky.	14.0	11.7
Memphis, Tenn.	14.25	14.8
Atlanta, Ga.	15.0	14.5
Charlotte, N. C.	15.15	14.65
Charleston, S. C.	13.75	13.25
Jackson, Miss.	14.0	11.0
Birmingham, Ala.	15.0	14.0
New Orleans, La.	13.25	13.5
Jacksonville, Fla.	13.0	12.0
Average	14.16	13.34

Midwestern

Helena, Mont.	17.5	18.0
Boise, Idaho	19.5	17.0
Casper, Wyo.	16.0	16.0
Reno, Nev.	16.0	16.5
Salt Lake City, Utah	18.5	15.0
Denver, Colo.	15.5	16.0
Phoenix, Ariz.	16.0	16.5
Albuquerque, N. M.	15.0	15.0
Average	16.75	16.25

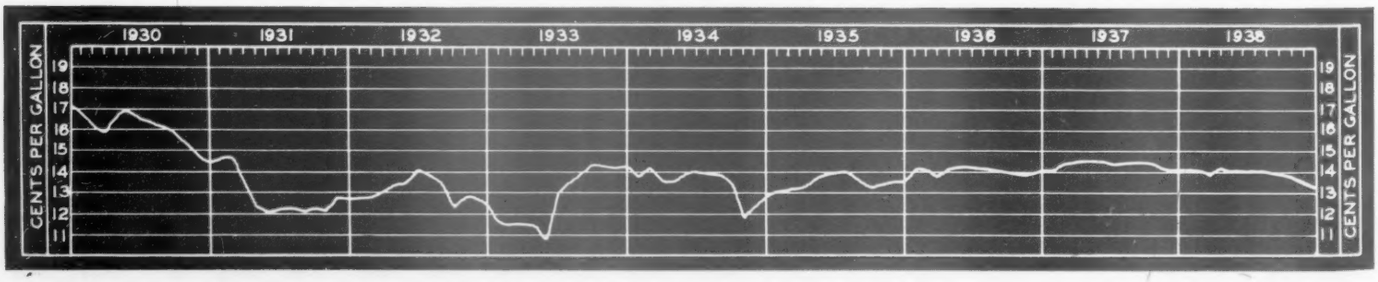
Western Coast

San Francisco, Calif.	14.5	14.5
Portland, Ore.	15.0	15.0
Seattle, Wash.	15.0	15.0
Average	14.83	14.83

The year saw the introduction by the Standard Oil Co. of Indiana of a 67-octane gasoline to take the place of the old third-grade material, which had an octane rating of 62 and below—and usually was well "below." When the Standard of Indiana announced its new departure it was predicted that the higher-octane fuel would make serious inroads on sales of the regular grade. Virtually all other refiners with retail outlets in the 10 states in which Indiana is recognized as the key marketing organization promptly introduced a competitive motor fuel.

Before the end of December it became evident that while sales of regular-grade gasoline were affected by the new third-grade offering, the shifts to the lower-priced fuel were not going to be as numerous as expected. There was a growing opinion that the newcomer was fostering a disposition on the part of car owners to buy better-grade gasoline and that it was destined to have a stabilizing

Trend of Gasoline Service Station Prices, Exclusive of Taxes, in 50 Representative Cities Throughout the United States



influence on the market. Supporting this view was the revelation that after being sold for a while at the same price as the old third-grade product, the new 67-octane was commanding 1 to 1½ cents more than its predecessor in metropolitan areas.

Feeling that the dealer plan of operating service stations had created problems as serious as those it settled crystallized during 1938. This plan, commonly referred to as the Iowa plan, because it originated in that state, was adopted as a defensive measure against confiscatory chain-store taxes. Refiners with their own retail outlets discontinued operating service stations, leasing them instead to independent dealers, thus placing the stations outside the prescription of chain-store tax laws.

The usual dealer margin was 3½ cents under the old system. Under the new one the dealer, managing his own business, could make it what he pleased. The margin rose to 4, 4½, even to 5 cents, without any corresponding increase in tankcar prices. Thus there was created a situation which invited the trackside, or cut-price, service-station operator to redouble his activity. As he established new stations and entered into more energetic competition with retailers operating under the dealer plan, the business of the latter fell off, and there developed in various parts of the country the demoralized markets which were responsible for the drop in service-station prices. As the year closed, refiners and marketers were discussing plans for correcting evils which the dealer plan had brought.

No changes affecting the 50 representative cities were made in gasoline taxes during 1938. The New Orleans motorist bent under the heaviest tax load, 10 cents a gallon. In the rest of the state the taxes aggregated 8 cents. In some Alabama cities, including Mobile and Montgomery, the car owner fared little better, dropping 9 cents into outstretched government hands for each gallon of gasoline he bought. Eight cents was the prevailing tax total in several other southern states. The luckiest motorist, in point of taxation, was the one who resided in Washington, D. C., for he was let off with the relatively trifling contribution of 3 cents. The average tax for the entire country was 5.4 cents.

Gasoline Service Station Prices in Effect During 1938, Exclusive of Taxes, in 50 Representative Cities, with Price Changes and Dates

Gasoline taxes in effect January 1, 1938, and January 1, 1939

	Price Jan. 1, 1938	Price changes in first six months							Price changes second 6 mos.				Price Jan. 1, 1939	Tax Jan. 1, 1938	Tax Jan. 1, 1939
Birmingham, Ala.	15.0	2/25 14.5	2/26 14.0	6/20 14.5	....	....	....	....	10/3 14.0	....	....	....	14.0	8.0	8.0
Phoenix, Ariz.	16.0	4/12 16.5	....	....	....	....	....	....	....	....	....	....	16.5	6.0	6.0
Little Rock, Ark.	13.75	2/16 13.25	....	....	....	....	....	....	10/1 12.75	....	....	....	12.75	7.5	7.5
San Francisco, Calif.	14.5	....	....	....	....	....	....	....	....	....	....	....	14.5	4.0	4.0
Denver, Colo.	15.5	3/10 14.5	....	....	....	....	....	....	7/12 16.0	....	....	....	16.0	5.0	5.0
Hartford, Conn.	13.1	....	....	....	....	....	....	....	12/21 13.0	12/31 11.0	....	....	11.0	4.0	4.0
Washington, D. C.	13.0	....	....	....	....	....	....	....	....	....	....	....	13.0	3.0	3.0
Dover, Del.	13.0	2/2 12.5	4/19 12.0	....	....	....	....	....	....	....	....	....	12.0	5.0	5.0
Jacksonville, Fla.	13.0	1/6 13.5	6/6 12.5	6/20 13.5	....	....	....	....	8/26 11.0	10/6 13.0	11/24 12.0	....	12.0	8.0	8.0
Atlanta, Ga.	15.0	5/9 14.0	6/10 13.0	6/20 14.0	....	....	....	....	10/3 14.5	....	....	....	14.5	7.0	7.0
Boise, Idaho	19.5	....	....	....	....	....	....	....	9/29 17.0	....	....	....	17.0	6.0	6.0
Chicago, Ill.	12.8	3/28 13.1	....	....	....	....	....	....	10/8 12.6	....	....	....	12.6	4.0	4.0
Peoria, Ill	13.3	3/28 13.6	....	....	....	....	....	....	10/8 13.1	....	....	....	13.1	4.0	4.0
Indianapolis, Ind.	13.9	3/28 14.3	....	....	....	....	....	....	10/8 13.8	....	....	....	13.8	5.0	5.0
Des Moines, Iowa	13.1	3/28 13.4	....	....	....	....	....	....	10/8 12.9	....	....	....	12.9	4.0	4.0
Wichita, Kans.	11.9	1/25 10.5	3/15 11.9	3/23 12.1	3/28 12.4	4/16 11.5	5/16 11.1	6/30 10.1	....	....	....	....	10.1	4.0	4.0
Louisville, Ky.	14.0	....	....	....	....	....	....	....	9/7 11.4	10/25 10.9	10/26 11.5	11/30 11.7	11.7	6.0	6.0
New Orleans, La.	13.25	2/15 12.5	....	....	....	....	....	....	7/8 13.25	9/30 12.75	10/15 13.5	....	13.5	10.0	10.0
Portland, Me.	13.0	3/30 13.5	....	....	....	....	....	....	9/9 12.5	12/5 11.7	....	....	11.7	5.0	5.0
Baltimore, Md.	12.75	....	....	....	....	....	....	....	9/30 12.25	....	....	....	12.25	5.0	5.0
Springfield, Mass.	13.0	3/31 13.5	4/28 13.0	....	....	....	....	....	11/30 11.0	....	....	....	11.0	4.0	4.0
Detroit, Mich.	13.1	3/28 13.3	....	....	....	....	....	....	7/22 12.3	10/8 12.8	....	....	12.8	4.0	4.0
Duluth, Minn.	14.0	3/28 14.4	....	....	....	....	....	....	10/8 13.9	....	....	....	13.9	5.0	5.0
Minneapolis, Minn.	13.7	3/28 14.0	....	....	....	....	....	....	10/8 13.5	11/1 12.5	12/1 12.0	....	12.0	5.0	5.0
Jackson, Miss.	14.0	2/25 13.5	6/20 14.0	....	....	....	....	....	7/7 13.5	12/7 11.0	....	....	11.0	7.0	7.0
Kansas City, Mo.	12.6	3/28 12.9	....	....	....	....	....	....	....	....	....	....	12.9	4.0	4.0
Helena, Mont.	17.5	5/2 18.0	....	....	....	....	....	....	....	....	....	....	18.0	6.0	6.0
Omaha, Neb.	13.7	3/31 14.0	....	....	....	....	....	....	10/11 13.5	....	....	....	13.5	6.0	6.0
Reno, Nev.	16.0	4/12 16.5	....	....	....	....	....	....	....	....	....	....	16.5	5.0	5.0
Newark, N. J.	12.25	6/1 12.9	....	....	....	....	....	....	9/26 12.4	....	....	....	12.4	4.0	4.0
Albuquerque, N. M.	15.0	....	....	....	....	....	....	....	....	....	....	....	15.0	6.5	6.5
New York, N. Y.	13.0	....	....	....	....	....	....	....	7/11 12.4	12/5 11.4	....	....	11.4	5.0	5.0
Charlotte, N. C.	15.15	....	....	....	....	....	....	....	9/30 14.65	....	....	....	14.65	7.0	7.0
Fargo, N. D.	14.7	3/28 15.2	....	....	....	....	....	....	10/8 14.7	....	....	....	14.7	4.0	4.0
Cleveland, Ohio	13.5	4/4 14.0	....	....	....	....	....	....	9/26 13.0	....	....	....	13.0	5.0	5.0
Tulsa, Okla.	14.0	....	....	....	....	....	....	....	8/5 12.0	....	....	....	12.0	5.0	5.0
Portland, Ore.	15.0	....	....	....	....	....	....	....	....	....	....	....	15.0	6.0	6.0
Philadelphia, Pa.	11.75	3/3 12.25	....	....	....	....	....	....	10/16 13.25	....	....	....	13.25	5.0	5.0
Providence, R. I.	12.8	5/5 12.5	....	....	....	....	....	....	11/30 11.0	....	....	....	11.0	4.0	4.0
Charleston, S. C.	13.75	....	....	....	....	....	....	....	9/30 13.25	....	....	....	13.25	7.0	7.0
Huron, S. D.	14.1	3/28 14.5	....	....	....	....	....	....	10/8 14.0	....	....	....	14.0	5.0	5.0
Memphis, Tenn.	14.25	2/15 13.5	....	....	....	....	....	....	7/8 14.5	9/30 14.8	....	....	14.8	8.0	8.0
Dallas, Tex.	13.5	2/10 14.0	3/4 13.0	....	....	....	....	....	....	....	....	....	13.8	5.0	5.0
Salt Lake City, Utah	18.5	4/12 17.0	....	....	....	....	....	....	8/19 16.0	11/3 15.0	....	....	15.0	5.0	5.0
Burlington, Vt.	13.0	1/17 13.4	3/30 13.9	....	....	....	....	....	9/9 13.2	10/30 14.4	....	....	14.4	5.0	5.0
Norfolk, Va.	13.75	2/23 13.25	....	....	....	....	....	....	....	....	....	....	13.25	6.0	6.0
Seattle, Wash.	15.0	....	....	....	....	....	....	....	....	....	....	....	15.0	6.0	6.0
Charleston, W. Va.	14.55	....	....	....	....	....	....	....	9/30 14.05	....	....	....	14.05	6.0	6.0
Milwaukee, Wis.	13.5	3/28 13.8	....	....	....	....	....	....	10/8 13.3	....	....	....	13.3	5.0	5.0
Casper, Wyo.	16.0	....	....	....	....	....	....	....	....	....	....	....	16.0	5.0	5.0
Average price	14.08	....	....	....	....	....	....	....	....	....	....	....	13.51	5.42	5.42

Annual Review

WILDCATTERS OPEN MANY NEW FIELDS, EXTEND OLD KANSAS POOL

By DAL DALRYMPLE

The wildcatters held a field meet in Kansas during 1938, completing 67 outpost wells that opened new oil and gas pools, extended proven fields or uncovered new productive horizons in old areas—a record of discovery that is outstanding in view of the fact that field activity throughout the state was sharply curtailed and total completions declined more than 1,000 from the 1937 figure. Of the 253 wildcats completed, 61 found oil in varying quantities, a percentage of 24.11 or nearly one strike in every four tests drilled.

With a record like that to shoot at, Kansas operators have their work cut out for them if they expect to do as well in 1939. Certain factors tending to depress the industry in the Sunflower State, notably the loss of a considerable portion of its market to Illinois and other areas, may result in continued curtailment of activity in proven fields. Wildcat exploration in western Kansas also may be on a lesser scale than in either of the last two years, but that decline may be offset by increased activity in a sector of the state that heretofore has been generally neglected by the oil men.

It is possible, indeed, some observers think it is probable, that the northeastern Kansas counties that lie within the Forest City basin will be the scene of a considerable drilling campaign that may offset the decline of operations in the western counties. The current Forest City lease boom that began in northwestern Missouri last summer has extended into the Kansas sector of the basin. Widespread leasing has been reported in recent weeks in Atchison, Doniphan, Jefferson, Jackson, Shawnee, Wabaunsee, Pottawatomie and other northeastern counties, with several large lease blocks being assembled. Both major companies and independent operators are partcipating in the lease play. The geology of the area is attractive to the oil men, with formations that are known to be productive elsewhere being present. It remains for the wildcatters to determine if oil has been trapped in the formations that underlie the northeastern counties. It is predicted that drilling operations in northeastern Kansas, as well as in adjacent sectors of the basin in Missouri, Iowa and Nebraska, will get under way as soon as lease blocks are completed, titles cleared and winter relaxes its grip on the country. By early spring several wildcats probably will have been started in the district. If any one of them should find oil, intensive drilling and exploration may follow.

Exploration to Continue

Exploration will continue throughout much of western Kansas, but on a reduced scale unless subsequent developments in the industry justify a resumption of the farflung activity of 1937 and 1938.

Two years ago Barton County loomed large on the oil horizon, with several new pools being opened as operators drilled extensively in order to protect leases. That activity continued throughout 1938, with the big

KANSAS NEW DISCOVERIES IN 1938

Field and county—	Location	Operator—	Comp.	No. wells Dec. 31	Producing formation	Total depth, ft.	Initial potential bbls.
North Toulon, Ellis	34-13-17w	Watchorn Oil & Gas Co.	Jan.	5	Arbuckle	3,529	515
Cunningham, Pratt	2-28-11w	Skelly Oil Co. and others	Jan.	..	Viola	4,300	43,485,000 ft. gas
Aldrich ext., Ness	5-18-25w	Continental Oil Co.	Jan.	10	Mississippi	4,325	653
Letsch ext., Russell	28-14-13w	R. H. Shields and others	Jan.	34	Kansas City	2,922	1,635
Zyba, Sumner	7-30- 1e	W. M. McKnabb	Jan.	1	Wilcox	3,869	386
Hoisington, Barton	21-17-13w	Thayer Drilling Co. and Brouk	Jan.	2	Kansas City	3,268	1,065
Richards, Ellis	5-11-18w	Gilmer Oil Co. and others	Jan.	2	Kansas City	3,373	941
Smoky Hill, Russell	2-15-14w	Coralena Oil Co.	Feb.	2	Kansas City		
Lindsborg, McPherson	8-17- 3w	Carter Oil Co. and others	Feb.	2	Viola	3,569	345
Walters ext., Ellis	13-12-18w	P. G. Reynolds and others	Feb.	23	Arbuckle	3,682	917
Sterling, Rice	4-22- 8w	W. E. Witt and others	Feb.	1	Chat	3,401	326
Campbell, Rice	28-19- 9w	Skiles and others	Feb.	3	Arbuckle	3,208	152
Oatville, Sedgwick	18-28- 1e	I. W. Murfin and others	Feb.	1	Wilcox	3,491	24
Schroeder, Ellsworth	29-17- 9w	Cities Service Oil Co. and others	Feb.	9	Arbuckle	3,215	2,644
....., Chautauqua	29-33-10	Sooby and others	Mar.		Peru	1,548	4
Greenvale, Russell	4-15-12w	Jones and Shelbourne and others	April	5	Lime	3,045	945
Buhler, Reno	25-22- 5w	Amerada and Westgate-Greenland	April	2	Simpson	3,902	912
Fairport ext., Ellis	2-13-16w	Hayes & Sackrider	April		Kansas City	3,242	150
Leesburgh, Stafford	12-25-13w	Continental Oil Co. and others	April	1	Arbuckle	4,162½	853
Bonham, Stafford	28-25-12w	National Refining Co.	April	1	Arbuckle	4,213	330
W. Ellinwood, Barton	7-20-11w	Crown Petroleum Co.	April	3	Arbuckle	3,352	473
Morel, Graham	15- 9-21w	Continental-Cities Service	April	1	Arbuckle	3,718	2,105
N. Stumps, Ellsworth	28-17-10w	Ralph Wixson and others	May	21	Arbuckle	3,306	786
S. Burnett, Ellis	12-11-18w	Duwe & Farris	May	2	Arbuckle	3,332	1,266
Fischer, Stafford	31-21-12w	Cardinal Oil Co. and others	May	3	Arbuckle	3,650	783
S. Sittner, Stafford	3-22-12w	Stanolind Oil & Gas Co.	May	1	Arbuckle	3,601	2,221
Decker, McPherson	12-21- 2w	Darrah-Aurell & Williams	May	1	Mississippi	3,561½	5,000,000 ft. gas
Hittle Arb., Cowley	21-31- 4	McKnabb & Blair	June	9	Arbuckle	3,284	1,220
Foster, Russell	19-15-15w	S. L. Parks and others	June	1	Kansas City	3,342	341
Trapp, Russell	11-15-14w	J. J. Hall	June	12	Kansas City	3,100	1,029
Aldrich ext., Ness	10-18-25w	Schoeppel & Elmore	June		Mississippi	4,353½	598
Nunn, Finney	27-21-34w	Atlantic Refining Co.	June	1	Mississippi	4,667	600
Odin, Barton	10-17-12w	C. L. Price	June	2	Arbuckle	3,343	539
Heinz, Rice	8-18-10w	Carlock-Kaiser	July	1	Kansas City	3,019	1,118
North Balta, Russell	29-13-14w	Phillips Petroleum Co.	July	3	Arbuckle	3,317	829
East Big Creek, Russell	31-14-14w	Joe Aylward	July	1	Arbuckle	3,155	901
East Frog Hollow, Cowley	21-32- 5e	B. B. Blair	August	8	Bartlesville	3,063	352
South Letsch, Russell	34-14-13w	Coralena Oil Co.	August	1	Kansas City	3,026	804
South Snider, Stafford	16-21-11w	Cities Service Co.	August	1	Arbuckle	3,412	412
North Eastborough, Sedgwick	8-27- 2e	National Refining Co.	August	2	Viola	3,262	420
Kruse, Rooks	3-10-16w	J. J. Hall	August	1	Kansas City	3,212	161
Wolf, Barton	36-19-12w	C. E. Ash and others	August	1	Arbuckle	3,374	501
Max, Stafford	35-21-12w	H. L. Rowley	August	1	Arbuckle	3,575	1,230
West Letsch, Russell	32-14-13w	Mid-Continent Petroleum Corp.	August	42	Kansas City	2,911	1,784
Lake City, Barber	18-31-13w	Pryor & Lockhart	Sept.	1	Arbuckle	4,611	2,425
Tate, Sumner	31-32- 2e	S. A. Murphy	Sept.	Abd.	Simpson	3,734	353
Lerado, Reno	11-26- 9w	Shell Petroleum Corp.	Sept.	1	Mississippi	4,156	1,300,000 ft. gas
Dunbar, Cowley	29-30- 5e	Spencer & Phelps	Sept.	1	Kansas City	2,260	632
Young, Ford	34-27-21w	Sinclair Prairie Oil Co.	Sept.	1	Mississippi	5,930	125
Rattlesnake, Stafford	13-24-14w	Atlantic Refining Co.	Oct.	1	Kansas City	4,195	1,494
West Wenke, Rice	18-20-10w	J. H. Tatlock	Oct.	1	Arbuckle	3,290	310
Fike, Rooks	9- 9-17w	Texokana Oil Co.	Nov.	1	Kansas City	3,507	39
Schneider, Russell	35-15-14w	W. Kansas O. & R. Co.	Nov.	2	Arbuckle	3,355	1,861
Wilson, Cowley	9-33- 6e	Smith-Pryor-Lockhart	Nov.	1	Arbuckle	3,517	148
Roxbury, McPherson	18-17- 1w	W. Kansas O. & R. Co.	Nov.	1	Chat	2,689	419
Shepherd, Kingman	10-27-10w	Bunte & Gorden	Dec.	1	Tonganoxie	4,529	50
Prusa, Barton	20-16-11w	Sinclair Prairie Oil Co.	Dec.	1	Arbuckle	3,252	1,313
Hesston, Harvey	7-22- 1w	Derby Oil Co. and others	Dec.	1	Misener	3,546	254
Hagan, Barton	20-20-11w	Gerbrand-Pulse Co.	Dec.	1	Arbuckle	3,330	669
Clawson, Barton	17-20-11w	Virginia Drilling Co.	Dec.	1	Arbuckle	3,299	679
South Bemis, Ellis	2-12-17w	Cities Service Co.	Dec.	1	Arbuckle	3,603	765
Fairfield, Russell	22-15-13w	W. I. Southern, Inc.	Dec.	1	Arbuckle	3,354	153

NEW HORIZONS AND EXTENSIONS

South Trapp, Barton	12-16-14w	Shell Petroleum Corp.	May	3	Kansas City	3,332	576
Vaughn, Russell	19-14-14w	National Refining Co.	May	1	Gorham	3,023	662
Hoisington, Barton	21-17-13w	Thayer Drilling Co.	June	1	Arbuckle	3,462	458
Lerado, Reno	22-26- 9w	A. R. Jones	June	1	Kansas City	3,538	173
Weathered, Cowley	4-32- 3e	Earl Wakefield	July	2	Mississippi	3,150	3,124
Burrton, Reno	14-23- 4w	Olson Oil Co.	July	1	Wilcox	3,727	15
Blue Hill, Ellis	11-12-16w	C. B. Davis and others	Aug.	1	Wilcox	3,192	225
Michel, Russell	36-14-14w	Phillips Petroleum Co.	Sept.	1	Topeka	2,877	72
Heinz, Rice	8-18-10w	Transwestern Co.	Sept.	1	Arbuckle	3,267	186
Greenvale, Russell	4-15-12w	Jones-Shelbourne	Nov.	1	Arbuckle	3,288	394

Note: **North Stumps now included in Stumps pool; East Frog Hollow now included in Frog Hollow; West Letsch now included in Hall pool; Walters extension added to Walters pool; Fairport extension added to Fairport pool.**

play extending southward into Stafford County, where several strikes were made by operators whose leases neared expiration dates. Pratt and Barber counties were due to share largely in that activity this year, as many leases in the two counties bear 1939 and 1940 expiration dates. Whether or not they will see exploration this year comparable with that in Barton and Stafford during the last two years is problematical. Undoubtedly there will be some wildcatting in those counties, but many Kansas operators who have gone into Illinois and the Forest City basin may delay their exploration in Pratt and Barber counties until a more favorable time.

This is true in other western Kansas counties. It may be assumed that wildcat drilling and operations in proven areas in Russell, Rice, Ellis, McPherson, Ellsworth, Barton and Stafford counties will continue more or less actively throughout 1939. Cowley County, which enjoyed a considerable revival the past year, and Sedgwick, Harvey, Butler, Reno and Sumner counties, having more or less adequate market outlets, probably will continue active. The counties more distant from pipelines and markets, such as Rooks, Trego, Ness, Graham, Scott, Finney, Ford and Clark, which already have some oil production, probably will be neglected by many of the operators this year, awaiting improved conditions and an increased demand for western Kansas oil. There will be some exploration in other western counties and in the Hugoton gas district of southwestern Kansas, but time only can tell the extent.

The Stripper Country

Certain sectors of southeastern Kansas had their market problems and other troubles the past year, but activity in that dictrict, largely unrelated to western Kansas development, may continue on a fairly even keel in 1939. There are many undeveloped spots in the heart of those old southeastern stripper fields, and operators who favor that part of Kansas probably will carry on their usual activity, especially in such counties as Elk, Greenwood, Woodson, Chautauqua and Wilson. Water flood projects will account for considerable activity in the Chanute district and other eastern Kansas sectors.

Any forecast of future oil operations is largely a guess, being dependent upon many factors that may change overnight, and a true picture of 1939 activity in Kansas must await the end of the year.

The story of 1938 is history, however, and the records are at hand for those who care to read. They tell a story of successful accomplishment in the last 12 months, made in the face of unfavorable conditions peculiar to the state.

Potential production of Kansas oil fields soared to a new all-time high, the daily potential at the end of the year being 3,687,016 bbls., according to figures of the Conservation Division, Corporation Commission. This is a gain of 617,016 bbls. during the year, the January 1, 1938, potential being 3,070,000 bbls. The record potential represented the productive capacity of 18,842 wells.

Reserves uncovered in Kansas in 1938 recently

KANSAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BARTON COUNTY:													
Ainsworth district—													
Daily average	1,928	1,215	1,201	1,265	957	1,162	1,516	1,410	1,434	1,496	1,507	1,692	
Month	59,768	34,020	37,231	37,950	29,667	34,860	46,996	43,710	43,020	46,376	45,210	52,452	511,260
Albert—													
Daily average	138	91	130	269	293	269	253	345	452	444	469	499	
Month	4,278	2,548	4,030	8,070	9,083	8,070	7,843	10,695	13,560	13,764	14,070	15,469	111,480
Beaver-North Beaver—													
Daily average	495	629	447	468	467	457	430	429	453	409	424	504	
Month	15,345	17,612	13,857	14,040	14,477	13,710	13,330	13,299	13,590	12,679	12,720	15,624	170,283
Bloomer—													
Daily average	3,538	2,963	2,682	2,709	2,305	2,217	2,141	2,254	2,300	2,009	1,912	2,148	
Month	109,678	82,964	83,142	81,270	71,455	66,510	66,371	69,874	69,000	62,279	57,360	66,588	886,491
Ellinwood—													
Daily average	536	456	368	319	341	370	495	444	358	352	347	407	
Month	16,616	12,768	11,408	9,570	10,571	11,100	15,345	13,764	10,740	10,912	10,410	12,617	145,821
Hiss—													
Daily average	174	148	111	115	107	98	98	104	94	91	73	146	
Month	5,394	4,144	3,441	3,450	3,317	2,940	3,038	3,224	2,820	2,821	2,190	4,526	41,305
Kraft—													
Daily average	771	639	768	906	716	803	784	866	766	720	683	686	
Month	23,901	17,892	23,808	27,180	22,196	24,090	24,304	26,846	22,980	22,320	20,490	21,266	277,273
Lanterman—													
Daily average	238	153	163	192	152	102	161	156	151	121	128	130	
Month	7,378	4,284	5,053	5,760	4,712	3,060	4,991	4,836	4,530	3,751	3,840	4,030	56,225
Rick—													
Daily average	155	133	107	108	96	104	92	93	98	96	96	101	
Month	4,805	3,724	3,317	3,240	2,976	3,120	2,852	2,883	2,940	2,976	2,880	3,131	38,844
South and Southwest Trapp—													
Daily average	507	546	1,178	1,353	1,057	1,294	862	1,272	1,224	1,166	1,255	1,735	
Month	15,717	15,288	36,518	40,590	32,767	38,820	26,722	39,432	36,720	36,146	37,650	53,785	410,155
South Silica—													
Daily average	2,812	2,570	2,501	2,443	1,829	1,845	1,765	1,918	2,033	1,643	1,720	1,899	
Month	87,172	71,960	77,531	73,290	56,699	55,350	54,715	59,458	60,990	50,933	51,600	58,869	758,567
Miscellaneous—													
Daily average	140	137	193	361	159	501	176	128	134	192	314	266	
Month	4,340	3,836	5,983	10,830	4,929	15,030	5,456	3,968	4,020	5,952	9,420	8,246	82,010
BARBER COUNTY:													
Whelan—													
Daily average	258	226	289	393	211	204	234	286	270	228	242	252	
Month	7,998	6,328	8,959	11,790	6,541	6,120	7,254	8,866	8,100	7,068	7,260	7,812	94,096
COWLEY COUNTY:													
David and South David—													
Daily average	174	227	237	170	164	169	225	222	191	220	224	221	
Month	5,394	6,356	7,347	5,100	5,084	5,070	6,975	6,882	5,730	6,820	6,720	6,851	74,329
Gueda Springs—													
Daily average	185	155	179	172	122	124	189	163	157	126	137	134	
Month	5,735	4,340	5,549	5,160	3,782	3,720	5,859	5,053	4,710	3,906	4,110	4,154	56,078
Murphy—													
Daily average	150	125	132	148	119	122	118	138	117	124	118	125	
Month	4,650	3,500	4,092	4,440	3,689	3,660	3,658	4,278	3,510	3,844	3,540	3,875	46,736
Trees—													
Daily average	225	208	170	201	170	182	251	220	199	170	179	176	
Month	6,975	5,824	5,270	6,030	5,270	5,460	7,781	6,820	5,970	5,270	5,370	5,456	71,496
Turner—													
Daily average	166	140	128	133	82	88	229	225	181	167	174	166	
Month	5,146	3,920	3,968	3,990	2,542	2,640	7,099	6,975	5,430	5,177	5,220	5,146	57,253
Weathered—													
Daily average	645	651	719	644	995	967	3,774	4,280	2,923	2,244	2,192	2,202	
Month	19,995	18,228	22,289	19,320	30,845	29,010	116,994	132,680	87,690	69,564	65,760	68,262	680,637
Biddle—													
Daily average	137	130	163	158	142	144	123	127	128	119	114	116	
Month	4,247	3,640	5,053	4,740	4,402	4,320	3,813	3,937	3,840	3,689	3,420	3,596	48,697
Burden—													
Daily average	265	273	278	262	261	256	239	260	249	221	240	243	
Month	8,215	7,644	8,618	7,860	8,091	7,680	7,409	8,060	7,470	6,851	7,200	7,533	92,631
Carson—													
Daily average	184	176	181	182	171	169	155	173	171	168	169	172	
Month	5,704	4,928	5,611	5,460	5,301	5,070	4,805	5,363	5,130	5,208	5,070	5,332	62,982
Eastman—													
Daily average	209	219	189	192	201	198	197	185	183	174	160	171	
Month	6,479	6,132	5,859	5,760	6,231	5,940	6,107	5,735	5,490	5,394	4,800	5,301	69,228
Grand Summit—													
Daily average	117	116	107	113	94	96	114	112	104	75	79	82	
Month	3,627	3,248	3,317	3,390	2,914	2,880	3,534	3,472	3,120	2,325	2,370	2,542	36,739
Rainbow Bend and West Rainbow Bend—													
Daily average	1,178	1,197	1,218	1,219	1,207	1,206	1,128	1,230	1,142	1,106	1,117	1,109	
Month	36,518	33,516	37,758	36,570	37,417	36,180	34,968	38,130	34,260	34,286	33,510	34,379	427,492
Rock, East Rock and North Rock—													
Daily average	272	467	408	393	211	214	657	586	539	392	401	396	
Month	8,432	13,076	12,648	11,790	6,541	6,420	20,367	18,166	16,170	12,152	12,030	12,276	150,068
State—													
Daily average	269	298	276	250	267	261	274	285	237	295	248	254	
Month	8,339	8,344	8,556	7,500	8,277	7,830	8,494	8,835	7,110	9,145	7,440	7,874	97,744
Winfield—													
Daily average	351	384	377	346	349	339	342	348	322	379	352	359	
Month	10,881	10,752	11,687	10,380	10,819	10,170	10,602	10,788	9,660	11,749	10,560	11,129	129,177
Miscellaneous—													
Daily average	599	674	636	724	582	618	545	636	501	541	544	540	
Month	18,569	18,872	19,716	21,720	18,042	18,540	16,895	19,716	15,030	16,771	16,320	16,740	216,931
MARION COUNTY:													
Daily average	.....	.....	.....	.....	.....	.....	898	935	857	786	709	713	
Month	.....	.....	.....	.....	.....	.....	27,838	28,985	25,710	24,366	21,270	22,103	150,272
COFFEY COUNTY:													
Daily average	75	76	91	88	90	91	87	88	77	60	64	60	
Month	2,325	2,128	2,821	2,640	2,790	2,730	2,697	2,728	2,310	1,860	1,920	1,860	28,809
ELK COUNTY (western half):													
Daily average	894	929	832	917	829	837	832	829	730	521	521	519	
Month	27,714	26,012	25,792	27,510	25,699	25,110	25,792	25,699	21,900	16,151	15,630	16,089	279,098

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KANSAS (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
CLARK COUNTY:													
Daily average	93	79	93	90	153	61	92	98	151	92	63	105	
Month	2,883	2,212	2,883	2,700	4,743	1,830	2,852	3,038	4,530	2,852	1,890	3,255	35,668
ELLIS COUNTY:													
Bemis—													
Daily average	6,606	5,853	5,429	5,710	5,531	5,677	5,220	5,448	5,370	5,271	4,928	5,368	
Month	204,786	163,884	168,299	171,300	171,461	170,310	161,820	168,888	161,100	163,401	147,840	166,408	2,019,497
Burnett—													
Daily average	.....	.....	.....	554	158	20	111	.....	.....	.....	.....	.....	
Month	.....	.....	.....	16,620	4,898	600	3,441	.....	.....	.....	.....	.....	25,559
Cress—													
Daily average	905	745	721	745	729	758	665	676	647	618	579	370	
Month	28,055	20,860	22,351	22,350	22,599	22,740	20,615	20,956	19,410	19,158	17,370	11,470	247,934
Shutts—													
Daily average	671	653	611	535	479	587	470	512	546	480	538	584	
Month	20,801	18,284	18,941	16,050	14,849	17,610	14,570	15,872	16,380	14,880	16,140	18,104	202,481
Ruder—													
Daily average	255	263	322	384	347	403	264	268	223	207	211	191	
Month	7,905	7,364	9,982	11,520	10,757	12,090	8,184	8,308	6,690	6,417	6,330	5,921	101,468
Walters—													
Daily average	767	623	676	653	602	637	575	567	576	520	557	531	
Month	23,777	17,444	20,956	19,590	18,662	19,110	17,825	17,577	17,280	16,120	16,710	16,461	221,512
Marshall—													
Daily average	515	429	381	371	364	323	324	343	318	291	306	339	
Month	15,965	12,012	11,811	11,130	11,284	9,690	10,044	10,633	9,540	9,021	9,180	10,509	130,819
Miscellaneous—													
Daily average	456	355	406	409	415	374	412	466	516	551	541	562	
Month	14,136	9,940	12,586	12,270	12,865	11,220	12,772	14,446	15,480	17,081	16,230	17,422	166,448
ELLSWORTH COUNTY:													
Breford—													
Daily average	407	407	414	450	342	349	325	409	366	337	375	378	
Month	12,617	11,396	12,834	13,500	10,602	10,470	10,075	12,679	10,980	10,447	11,250	11,718	138,568
Lorraine—													
Daily average	2,743	2,609	2,692	2,422	2,385	2,087	2,104	2,079	1,961	1,999	2,003	1,789	
Month	85,033	73,052	83,452	72,660	73,935	62,610	65,224	64,449	58,830	61,969	60,090	55,459	816,763
Stoltenberg—													
Daily average	304	399	386	346	316	267	390	538	354	414	516	410	
Month	9,424	11,172	11,966	10,380	9,796	8,010	12,090	16,678	10,620	12,834	15,480	12,710	141,160
Stratman—													
Daily average	279	270	280	261	255	271	254	254	252	260	253	255	
Month	8,649	7,560	8,680	7,830	7,905	8,130	7,874	7,874	7,560	8,060	7,590	7,905	95,617
Miscellaneous—													
Daily average	116	171	229	252	193	244	96	116	102	101	112	113	
Month	3,596	4,780	7,099	7,560	5,983	7,320	2,976	3,596	3,060	3,131	3,360	3,503	55,964
KINGMAN COUNTY:													
Daily average	609	620	625	508	591	581	511	574	609	601	666	657	
Month	18,879	17,360	19,375	15,240	18,321	17,430	15,841	17,794	18,270	18,631	19,980	20,367	217,488
PRATT COUNTY:													
Iuka—													
Daily average	31	26	29	31	28	40	55	73	50	49	68	96	
Month	961	728	899	930	868	1,200	1,705	2,263	1,500	1,519	2,040	2,976	17,589
EDWARDS COUNTY:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
RUSH COUNTY:													
Winget-Otis—													
Daily average	437	209	362	964	1,086	1,101	1,633	1,790	1,932	1,755	1,331	1,116	
Month	13,547	5,852	11,222	28,920	33,666	33,030	50,623	55,490	57,960	54,405	39,930	34,596	419,241
PAWNEE COUNTY:													
Daily average	87	110	52	69	84	107	120	69	127	30	4	43	
Month	2,697	3,080	1,612	2,070	2,604	3,210	3,720	2,139	3,810	930	120	1,333	27,325
SCOTT COUNTY:													
Daily average	1,021	890	756	969	839	1,022	923	849	1,006	964	913	1,107	
Month	31,651	24,920	23,436	29,070	26,009	30,660	28,613	26,319	30,180	29,884	27,390	34,317	342,449
RUSSELL COUNTY:													
Allen—													
Daily average	68	66	131	148	114	123	132	157	153	140	141	149	
Month	2,108	1,848	4,061	4,440	3,534	3,690	4,092	4,867	4,590	4,340	4230	4,619	46,419
Atherton—													
Daily average	339	405	405	328	325	353	332	379	385	377	417	430	
Month	10,509	11,340	12,555	9,840	10,075	10,590	10,292	11,749	11,550	11,687	12,510	13,330	136,027
Big Creek—													
Daily average	1,131	964	940	1,050	805	556	760	755	749	697	788	636	
Month	35,061	26,992	29,140	31,500	24,955	16,680	23,560	23,405	22,470	21,607	23,640	19,716	298,726
Coralena District—													
Daily average	893	752	805	857	590	708	682	727	642	551	669	556	
Month	27,683	21,056	24,955	25,710	18,290	21,240	21,142	22,537	19,260	17,081	20,070	17,236	256,260
Dumler—													
Daily average	355	303	363	297	191	200	193	208	210	179	140	169	
Month	11,005	8,484	11,253	8,910	5,921	6,000	5,983	6,448	6,300	5,549	4,200	5,239	85,292
Eichman—													
Daily average	335	254	272	292	185	226	242	191	208	202	182	201	
Month	10,385	7,112	8,432	8,760	5,735	6,780	7,502	5,921	6,240	6,262	5,460	6,231	84,820
Gorham and East Gorham—													
Daily average	4,307	4,090	4,640	4,046	4,212	4,218	3,765	3,687	3,403	3,407	3,338	5,473	
Month	133,517	114,520	143,840	121,380	130,572	126,540	116,715	114,297	102,090	105,617	100,140	169,663	1,478,891
Gurney and South Gurney—													
Daily average	473	356	864	860	714	444	758	853	771	671	705	413	
Month	14,663	9,968	26,784	25,800	22,134	13,320	23,498	26,443	23,130	20,801	21,150	12,803	240,494
Hall and North Hall—													
Daily average	1,114	1,114	1,111	1,162	1,026	971	993	1,026	1,037	931	876	902	
Month	34,534	31,192	34,441	34,860	31,806	29,130	30,783	31,806	31,110	28,861	26,280	27,962	372,765
Karst—													
Daily average	125	107	94	.....	.....	.....	94	75	.....	.....	97	.....	
Month	3,875	2,996	2,914	.....	.....	.....	2,914	2,325	.....	.....	2,910	.....	17,934
Letsch—													
Daily average	746	696	806	1,085	813	750	901	936	888	970	893	1,059	
Month	23,126	19,488	24,986	32,550	25,203	22,500	27,931	29,016	26,640	30,070	26,790	32,829	321,129
Neidenthal—													
Daily average	307	308	269	269	229	292	213	242	214	244	258	251	
Month	9,517	8,624	8,339	8,070	7,099	8,760	6,603	7,502	6,420	7,564	7,740	7,781	94,019
Russell—													
Daily average	2,019	1,642	1,225	1,170	1,225	1,206	1,158	1,134	1,111	1,087	1,143	1,089	
Month	62,589	45,976	37,975	35,100	37,975	36,180	35,898	35,154	33,330	33,697	34,290	33,759	461,923
Sellens—													
Daily average	760	716	711	602	627	608	622	627	573	531	505	447	
Month	23,560	20,048	22,041	18,060	19,437	18,240	19,282	19,437	17,190	16,461	15,150	13,857	222,763
Sullivan—													
Daily average	3,764	3,512	4,096	3,228	2,437	2,816	2,609	2,610	2,468	2,105	1,993	1,997	
Month	116,684	98,336	126,976	96,840	75,547	84,480	80,879	80,910	74,040	65,255	59,790	61,907	1,021,644
Trapp—													
Daily average	11,345	10,256	9,885	10,680	8,167	7,680	7,858	8,982	8,042	7,554	7,370	6,528	
Month	351,695	287,168	306,435	320,400	253,177	230,400	243,598	278,442	241,260	234,174	221,100	202,368	3,170,217
Vaughn—													
Daily average	775	681	810	862	643	566	540	735	546	586	586	506	
Month	24,025	19,068	25,110	25,860	19,933	16,980	16,740	22,785	16,380	18,166	17,580	15,686	238,313
Fairport—													
Daily average	1,767	1,934	1,909	1,837	1,824	1,905	1,794	1,834	1,860	1,822	1,808	1,854	
Month	54,777	54,152	59,179	55,110	56,544	57,150	55,614	56,854	55,800	56,482	54,240	57,474	673,376
Miscellaneous—													
Daily average	502	477	535	580	748	547	674	616	638	646	709	717	
Month	15,562	13,356	16,585	17,400	23,188	16,410	20,894	19,096	19,140	20,026	21,270	22,227	225,154
NESS COUNTY:													
Aldrich—													
Daily average	.....	.....	.....	36	37	.....	142	139	157	183	215	154	
Month	.....	.....	.....	1,080	1,147	.....	4,402	4,309	4,710	5,673	6,450	4,774	32,545
ROOKS COUNTY:													
Westhusin—													
Daily average	341	231	211	491	413	270	304	306	192	234	255	465	
Month	10,571	6,468	6,541	14,730	12,803	8,100	9,424	9,486	5,760	7,254	7,650	14,415	113,202
Miscellaneous—													
Daily average	90	174	186	155	172	181	232	249	418	210	401	393	
Month	2,790	4,872	5,766	4,650	5,332	5,430	7,192	7,719	12,540	6,510	12,030	12,183	87,014

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were estimated by The Oil and Gas Journal at 120,300,000 bbls., and the estimate did not take into account the last three discoveries of the year which probably will add another 2,000,000 or 3,000,000 bbls. to the total. Although more discoveries were recorded in 1937 than in 1938, the percentage of discovery was less and the new reserve figure for that year was placed at 113,700,000 bbls.

Estimated total of Kansas reserves at the end of the year was 697,289,632 bbls., as against 591,692,064 bbls. at the end of 1936 and 636,233,632 bbls. at the end of 1937.

A total of 1,573 wells were completed in 1938 compared with 2,590 completions in 1937, a decline of 1,017. With the exception of 1937, the total of the last 12 months was greater than in any year since 1928. The 1938 total included 63 gas wells and 402 dry holes.

The 67 wildcat producers completed the past year included three gas wells in Grant County and one gas well each in Cowley, McPherson and Pratt counties. All of the 61 oil discoveries, while originally classed as wildcats, did not open new pools, several of them merely extending previously discovered areas and some others uncovering new pay horizons in old fields. The tabulations of total completions and wildcat drilling do not include activity in several of the old stripper counties in eastern and southeastern Kansas, which were not scouted and for which records were not available.

The outstanding development of the year, perhaps, was in an area that was opened late in 1937—the Zenith pool in eastern Stafford County.

Development at Zenith

Misener sand production was uncovered at Zenith in September, 1937, by Stanolind Oil & Gas Co. in section 23-24-11w and four wells had been completed in the pool by the first of 1938, potential production then being only 5,603 bbls. daily. It proved to be a highly productive field, however, and at the end of the past year 97 wells with total potential of 208,236 bbls. had been completed and numerous tests were being drilled. One of the larger producers to be drilled in Kansas in recent years was completed in August at E. H. Moore, Inc. No. 1 Johnson, SW cor. section 24-24-11w, which flowed 592 bbls. of oil in one and one-half hours from Misener sand and was rated potentially at 8,000 bbls. of oil daily. Several wells were drilled on the Zenith townsite. The pool had not been defined on the north and east sides at the year-end.

KANSAS

Summary of Wells Completed in 1938

County	Comp.	Prod.	Dry	Gas
Barber	22	1,843	8	10
Barton	262	132,309	52	1
Butler	65	3,100	19	0
Chase	2	152	1	0
Chautauqua	5	9	2	1
Clark	2	0	2	0
Coffey	1	0	1	0
Cowley	75	18,227	31	2
Ellis	119	124,672	15	0
Ellsworth	48	19,274	11	0
Finney	1	600	0	0
Ford	1	125	0	0
Graham	4	709	3	0
Grant	12	0	0	12
Greenwood	49	681	19	0
Harper	1	0	1	0
Harvey	21	8,369	5	0
Jackson	1	0	1	0
Kearny	5	0	0	5
Kingman	2	50	0	1
Lane	1	0	1	0
Marion	9	277	4	0
McPherson	56	13,156	8	1
Meade	3	0	3	0
Ness	12	1,081	7	0
Norton	2	0	2	0
Osage	1	0	1	0
Pawnee	5	1,086	2	0
Pottawatomie	1	0	1	0
Pratt	12	704	7	2
Reno	34	10,933	10	3
Rice	167	86,843	35	6
Riley	1	0	1	0
Rooks	17	2,787	9	0
Rush	6	548	4	0
Russell	201	111,236	31	0
Scott	1	743	0	0
Sedgwick	26	4,834	10	1
Stafford	185	91,763	49	0
Stevens	18	0	1	17
Sumner	25	6,406	13	0
Thomas	1	0	1	0
Trego	2	0	2	0
Woodson	89	1,346	29	1
Total	1,573	643,863	402	63

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	155	112,901	33	18
February	127	65,065	31	4
March	166	61,384	51	5
April	128	57,785	35	6
May	125	68,445	39	3
June	157	57,374	43	6
July	91	14,891	30	5
August	104	33,650	24	2
September	167	39,479	42	5
October	121	37,115	23	1
November	112	42,836	25	5
December	120	52,938	26	3
Total 1938	1,573	643,863	402	63
Total 1937	2,590	1,479,293	606	117
Difference	1,017	835,430	204	54
Total 1936	1,721	965,777	446	61
Total 1935	1,210	845,522	281	39
Total 1934	835	300,789	221	22
Total 1933	540	193,736	134	16
Total 1932	572	193,139	188	21
Total 1931	470	144,921	129	112
Total 1930	1,036	288,296	423	168
Total 1929	1,058	165,611	453	52

Another area of major activity in 1938 included the Bloomer, Habiger, Stumps, and Heinz sectors of Barton, Rice and Ellsworth counties. The Bloomer field, already productive in Barton and Ellsworth counties, was extended into Rice County and at the end of the year the 90 wells in the pool had total potential of 125,724 bbls. of oil, with production from Arbuckle and Lansing limes. The nearby Habiger-Stumps area was equally busy, with several large producers being completed and several extensions being recorded. Some 11 completions were recorded at Habiger during the year. The neighboring Heinz pool was a discovery of the year. These pools have not been defined and the ultimate joining of Bloomer and the Habiger district is anticipated.

The state's largest field, Silica, straddling the Barton-Rice county line, accounted for 47 of the total completions of the year and was given several extensions. The new production, however, barely offset the decline, the net gain being 7,160 bbls. The 455 wells in the Silica field had total potential of 445,388 bbls. at the end of the year.

South Silica Grows

The nearby South Silica pool and the adjacent Ellinwood district of Barton County, where several new productive spots were found, also ranked as an area of major activity. Twenty new oil producers were completed at South Silica, adding more than 21,000 bbls. daily to the total potential of the field,

KANSAS (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
RENO COUNTY:													
Abbyville—													
Daily average	143	127	120	139	97	99	94	102	89	75	77	78	
Month	4,433	3,556	3,720	4,170	3,007	2,970	2,914	3,162	2,670	2,325	2,310	2,418	37,655
Burrton—													
Daily average	11,984	10,848	11,007	10,420	9,107	10,231	8,772	8,391	8,603	7,795	8,840	9,861	
Month	371,504	303,744	341,217	312,600	282,317	306,930	271,932	260,121	258,090	241,645	265,200	305,691	3,520,991
Hilger—													
Daily average	1,276	1,057	816	890	828	757	736	734	751	735	760	662	
Month	39,556	29,596	25,296	26,700	25,668	22,710	22,816	22,754	22,530	22,785	22,800	20,522	303,733
Lerado—													
Daily average	1,545	1,287	1,133	1,341	991	927	989	962	1,016	788	765	726	
Month	47,895	36,036	35,123	40,230	30,721	27,810	30,659	29,822	30,480	24,428	22,950	22,506	378,660
Buehler—													
Daily average	.....	.....	.....	.....	.....	.....	65	220	194	167	188	212	
Month	.....	.....	.....	.....	.....	.....	2,015	6,820	5,820	5,177	5,640	6,572	32,044
Miscellaneous—													
Daily average	42	30	65	71	66	51	18	20	34	20	29	.....	
Month	1,302	840	2,015	2,130	2,046	1,530	558	620	1,020	620	870	.....	13,551
RICE COUNTY:													
Chase—													
Daily average	6,488	5,736	5,899	5,649	4,436	4,437	4,293	4,690	4,071	3,995	4,360	4,125	
Month	201,128	160,608	182,869	169,470	137,516	133,110	133,083	145,390	122,130	123,845	130,800	127,875	1,767,824
Edwards—													
Daily average	1,153	1,109	1,085	952	822	812	890	920	1,251	1,306	1,255	1,358	
Month	35,743	31,052	33,635	28,560	25,482	24,360	27,590	28,520	37,530	40,486	37,650	42,098	392,706
Geneseo—													
Daily average	2,437	2,139	2,168	2,660	2,129	2,202	3,097	3,171	3,082	3,389	3,293	4,160	
Month	75,547	59,892	67,208	79,800	65,999	66,060	96,007	98,301	92,460	105,059	98,790	128,960	1,034,083
Keesling—													
Daily average	1,010	900	947	958	790	835	861	845	766	782	875	776	
Month	31,310	25,200	29,357	28,740	24,490	25,050	26,691	26,195	22,980	24,242	26,250	24,056	314,561
Orth—													
Daily average	200	208	233	231	207	204	189	192	179	193	221	198	
Month	6,200	5,824	7,223	6,930	6,417	6,120	5,859	5,952	5,370	5,983	6,630	6,138	74,646
Ploog—													
Daily average	238	211	228	243	174	194	202	155	150	194	187	216	
Month	7,378	5,908	7,068	7,290	5,394	5,820	6,262	4,805	4,500	6,014	5,610	6,696	72,745
Raymond—													
Daily average	1,058	1,059	1,106	879	800	808	805	851	856	752	771	762	
Month	32,798	29,652	34,286	26,370	24,800	24,240	24,955	26,381	25,680	23,312	23,130	23,622	319,226
Silica—													
Daily average	16,114	14,769	13,335	13,382	10,879	10,631	10,058	10,689	10,501	9,587	9,992	10,057	
Month	499,534	413,532	413,385	401,460	337,249	318,930	311,798	331,359	315,030	297,197	299,760	311,767	4,251,001
Stumps—													
Daily average	1,050	865	898	1,045	928	1,179	1,255	1,380	1,382	2,388	2,517	2,741	
Month	32,550	24,220	27,838	31,350	28,768	35,370	38,905	42,780	41,460	74,028	75,510	84,971	537,750
Wenke—													
Daily average	212	194	198	199	157	151	133	150	142	124	147	141	
Month	6,572	5,432	6,138	5,970	4,867	4,530	4,123	4,650	4,260	3,844	4,410	4,371	59,167
Wherry and East Wherry—													
Daily average	5,474	5,114	4,413	4,171	3,772	3,692	3,511	3,414	3,511	2,997	3,436	3,256	
Month	169,694	143,192	136,803	125,130	116,932	110,760	108,841	105,834	105,330	92,907	103,080	100,936	1,419,439
Haferman—													
Daily average	262	199	211	198	130	181	168	173	89	130	138	158	
Month	8,122	5,572	6,541	5,940	4,030	5,430	5,208	5,363	2,670	4,030	4,140	4,898	61,944
Welch and North Welch—													
Daily average	442	480	443	440	460	345	496	487	457	448	427	469	
Month	13,702	13,440	13,733	13,200	14,260	10,350	15,376	15,097	13,710	13,888	12,810	14,539	164,105
Miscellaneous—													
Daily average	306	320	286	352	332	384	418	533	637	452	615	611	
Month	9,486	8,960	8,866	10,560	10,292	11,520	12,958	16,523	19,110	14,012	18,450	18,941	159,678

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placed at 131,909 bbls. at the end of the year from 83 wells, and proving an additional 400 acres for production. It appears probable that Silica, South Silica and some of the pools in the Ellinwood district may be joined eventually.

RESULTS OF WILDCAT DRILLING

County —	Oil and gas wells		Dry holes	Average depth of dry holes
Barber	0		5	4,908
Barton	8		18	3,334
Butler	3		11	2,585
Chase	0		1	2,612
Clark	0		2	6,971
Cowley	4	(1 gas)	10	3,295
Ellis	6		8	3,543
Ellsworth	2		2	3,363
Finney	1		0	0
Graham	1		3	4,097
Grant	3	(3 gas)	0	0
Greenwood	0		4	1,814
Harper	0		1	5,198
Harvey	1		2	3,595
Jackson	0		1	2,905
Kingman	1		0	0
Lane	0		1	4,911
Marion	0		2	2,993
McPherson	3	(1 gas)	2	3,573
Ness	2		4	4,335
Norton	0		2	3,841
Osage	0		1	1,130
Pawnee	0		1	3,825
Pottawatomie	0		1	1,985
Pratt	1	(gas)	7	4,650
Reno	2		6	4,035
Rice	4		14	3,356
Riley	0		1	1,989
Rooks	3		7	3,615
Rush	0		1	3,629
Russell	8		15	3,329
Sedgwick	2		4	3,897
Stafford	7		24	3,857
Saline	0		1	1,800
Sumner	2	(1 abd.)	7	3,745
Thomas	0		1	5,312
Trego	0		1	4,057
Woodson	3		15	1,583
Total	67		186	
Average depth of oil and gas wells, feet				3,327
Average depth of dry holes, feet				3,425
Percentage of oil wells				24.11
Percentage of gas wells				2.37
Percentage of dry holes				73.52

The Trapp district, originally opened in Russell County and extended into Barton County, and neighboring areas in southern Russell and northern Barton saw development throughout the year, with new pay horizons being uncovered and some extensions and discoveries being recorded. The 334 wells in the field had total potential of 500,000 bbls. at the end of the year, making it the first pool in the state to reach that figure. Production was from Arbuckle, Conglomerate, Lansing and Topeka formations.

The South Trapp pool in Barton County took rank with the major areas of the state, with Lansing lime production being uncovered and several extensions being made. This area had 8 Arbuckle lime wells with total potential of 13,675 bbls. at the first of the year, and 12 months later this had been increased to 44 Arbuckle wells with potential of 61,959 bbls. and 3 Lansing lime wells with potential of 4,027 bbls. Additional extensions and further development of the Lansing horizon can be looked for this year.

Bemis Extended

Ellis County contributed to the general merriment with extensive development in the prolific Bemis field, where completion of 2,000 and 3,000-bbl. producers was not uncommon. A total of 119 wells were completed in Ellis County, including 69 new Arbuckle lime producers at Bemis. These proved an additional 700 acres and added 111,640 bbls. potential, giving Bemis 218 producers with total potential of 434,579 bbls. at the year-end. Most of the new development was in sections 14, 21, 26, 27, 28, and 29-11-17w. The field has not been defined on the east and west sides and at the northeast and southwest corners.

The Geneseo field in northern Rice County continued to expand throughout the year, several extensions being added and proving new acreage on the northwest and east sides. Completions at Geneseo totaled 50, giving the field a total of 103 wells with grand potential of 199,477 bbls. as the year ended.

Cowley County experienced a revival in 1938, with the Hittle and Weathered pools setting the pace. Discovery of Arbuckle lime production in the old Hittle

KANSAS (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
HARVEY COUNTY:													
Halstead—													
Daily average	871	922	827	726	554	517	543	546	507	540	599	541	
Month	27,001	25,816	25,637	21,780	17,174	15,510	16,833	16,926	15,210	16,740	17,970	16,771	233,368
Hollow-Nikkel—													
Daily average	2,171	2,598	2,839	2,021	2,021	3,045	1,895	1,822	1,750	1,640	1,866	1,811	
Month	67,301	72,744	88,009	60,630	62,651	91,350	58,745	56,482	52,500	50,840	55,980	56,141	773,373
Sperling—													
Daily average	172	154	158	164	121	29	133	120	120	489	475	303	
Month	5,332	4,312	4,898	4,920	3,751	870	4,123	3,720	3,600	15,159	14,250	9,393	74,328
McPHERSON COUNTY:													
Chindberg—													
Daily average	520	441	484	391	383	376	329	338	347	410	424	566	
Month	16,120	12,348	15,004	11,730	11,873	11,280	10,199	10,478	10,410	12,710	12,720	17,546	152,418
Graber—													
Daily average	3,267	2,947	2,526	2,853	2,633	2,702	3,256	3,237	2,993	3,054	3,164	2,947	
Month	101,277	82,516	78,306	85,590	81,623	81,060	100,936	100,347	89,790	94,674	94,920	91,357	1,082,396
Johnson—													
Daily average	295	255	281	274	228	241	263	266	252	124	237	296	
Month	9,145	7,140	8,711	8,220	7,068	7,230	8,153	8,246	7,560	3,844	7,110	9,176	91,603
McPherson—													
Daily average	224	223	325	234	186	180	230	248	113	260	213	108	
Month	6,944	6,244	10,075	7,020	5,766	5,400	7,130	7,688	3,390	8,060	6,390	3,348	77,455
Ritz-Canton—													
Daily average	4,565	5,254	4,911	4,132	4,222	4,216	4,241	4,239	4,291	4,169	4,067	5,968	
Month	141,515	147,112	152,241	123,960	130,882	126,480	131,471	131,409	128,730	129,239	122,010	185,008	1,650,057
Voshell—													
Daily average	2,039	2,314	2,476	1,995	1,996	2,075	1,987	1,937	1,877	1,996	1,932	2,527	
Month	63,209	64,792	76,756	59,850	61,876	62,250	61,597	60,047	56,310	61,876	57,960	78,337	764,860
Miscellaneous—													
Daily average	94	65	97	57	65	69	55	58	52	56	55	.....	
Month	2,914	1,820	3,007	1,710	2,015	2,070	1,705	1,798	1,560	1,736	1,650	.....	21,985
SEDGWICK COUNTY:													
Eastborough—													
Daily average	665	644	660	688	695	691	670	675	655	735	746	617	
Month	20,615	18,032	20,460	20,640	21,545	20,730	20,770	20,925	19,650	22,785	22,380	19,127	247,659
Goodrich—													
Daily average	731	699	607	641	603	611	829	836	826	788	802	791	
Month	22,661	19,572	18,817	19,230	18,693	18,330	25,699	25,916	24,780	24,428	24,060	24,521	266,707
Greenwich—													
Daily average	929	990	1,004	1,038	1,028	1,018	1,014	977	979	977	968	1,146	
Month	28,799	27,720	31,124	31,140	31,868	30,540	31,434	30,287	29,370	30,287	29,040	35,526	367,135
Robbins—													
Daily average	440	452	437	446	422	426	394	419	382	348	383	374	
Month	13,640	12,656	13,547	13,380	13,082	12,780	12,214	12,989	11,460	10,788	11,490	11,594	149,620
Valley Center—													
Daily average	969	1,024	995	1,024	1,014	1,009	936	953	959	892	931	934	
Month	30,039	28,672	30,845	30,720	31,434	30,270	29,016	29,543	28,770	27,652	27,930	28,954	353,845
Miscellaneous—													
Daily average	46	131	99	72	88	81	92	78	100	70	117	116	
Month	1,426	3,668	3,069	2,160	2,728	2,430	2,852	2,418	3,000	2,170	3,510	3,596	33,027
STAFFORD COUNTY:													
Drach—													
Daily average	40	49	30	139	177	260	419	220	260	194	220	243	
Month	1,240	1,372	930	4,170	5,487	7,800	12,989	6,820	7,800	6,014	6,600	7,533	68,755
Jordon—													
Daily average	171	154	141	144	132	132	101	134	118	81	86	84	
Month	5,301	4,312	4,371	4,320	4,084	3,960	3,131	4,154	3,540	2,511	2,580	2,604	44,876
Richardson—													
Daily average	2,149	1,813	1,431	1,464	1,386	1,323	1,339	1,341	1,345	1,219	1,370	1,192	
Month	66,619	50,764	44,361	43,920	42,966	39,690	41,509	41,571	40,350	37,789	41,100	36,952	527,591
St. John—													
Daily average	547	504	397	473	440	451	421	427	426	389	396	407	
Month	16,957	14,112	12,307	14,190	13,640	13,530	13,051	13,237	12,780	12,059	11,880	12,617	160,360
Zenith—													
Daily average	283	240	237	362	697	819	1,034	1,165	1,311	1,650	1,723	2,428	
Month	8,773	6,720	7,347	10,860	21,607	24,570	32,054	36,115	39,330	51,150	51,690	75,268	365,484
Miscellaneous—													
Daily average	296	249	206	347	419	461	178	152	176	234	307	382	
Month	9,176	6,972	6,386	10,410	12,989	13,830	5,518	4,712	5,280	7,254	9,210	11,842	103,579
TREGO COUNTY:													
Daily average	281	296	301	294	252	261	234	238	230	221	201	217	
Month	8,711	11,297	9,331	8,820	7,812	7,830	7,254	7,378	6,900	6,851	6,030	6,727	94,941
SUMNER COUNTY:													
Churchill—													
Daily average	742	716	742	719	728	726	653	665	698	651	635	639	
Month	23,002	20,048	23,002	21,570	22,568	21,780	20,243	20,615	20,940	20,181	19,050	19,809	252,808
Oxford and West Oxford—													
Daily average	1,462	1,331	1,277	1,309	1,139	1,170	1,225	1,180	1,118	1,128	1,037	1,557	
Month	45,322	37,268	39,587	39,270	35,309	35,100	37,975	36,580	33,540	34,968	31,110	48,267	454,296
Padgett—													
Daily average	253	250	33	231	245	243	207	275	197	267	234	240	
Month	7,843	7,000	1,023	6,930	7,595	7,290	6,417	8,525	5,910	8,277	7,020	7,440	81,270
Wellington—													
Daily average	2,204	2,027	2,137	2,088	1,596	965	3,639	2,481	2,368	1,876	1,766	2,081	
Month	68,324	56,756	66,247	62,640	49,476	28,950	112,809	76,911	71,040	58,156	52,980	64,511	768,800
Miscellaneous—													
Daily average	409	422	710	369	343	342	383	417	380	249	314	306	
Month	12,679	11,816	22,010	11,070	10,633	10,260	11,873	12,927	11,400	7,719	9,420	9,486	141,293

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pool, previously productive in the Lansing-Kansas City series, was one of the highlights of 1938. With the discovery of Arbuckle pay, deepening of old Lansing producers got under way and new wells were started. Nine Arbuckle producers with total potential of 16,158 bbls. had been completed at the turn of the year, and limits of the deep horizon remained to be determined.

Mississippi lime production was uncovered in the Weathered pool, Cowley County, and two producers with total potential of 3,039 bbls. had been completed by January 1, when the pool had grand potential of 39,456 bbls. from Arbuckle, Lansing and Mississippi horizons.

Activity at Letsch

The Letsch pool in Russell County was a scene of considerable activity, with 19 wells being completed. It had total potential of 57,637 bbls. on December 31, a gain of more than 30,000 bbls. in the 12-month period.

The Graber pool in southeastern McPherson County, a discovery of 1937, was steadily developed, the number of wells being increased to 112 with total potential of 56,440 bbls. from Hunton lime. Chat and Misener sand pay zones also were found in the field, with six small wells being produced in those horizons.

There was some development in eastern Kansas in 1938, although not as extensive as in the previous year. Important water-flood projects were under way in Anderson, Bourbon, Neosho and other counties, resulting in the drilling of numerous wells not included in the state totals. Several wells were drilled in the Neosho Falls area and elsewhere in Woodson County, also not in the tabular report because they are in an unprorated sector that is not scouted and not in Corporation Commission records. This is true of the eastern area, generally. Developments of production at around 250 feet was under way in sections 27 and 34-28-14e, near Fredonia in Wilson County, with 10 producing wells completed. Some activity was reported in Montgomery and Chautauqua counties, Greenwood County development continued on a moderate scale and some new productive areas were uncovered in Butler County.

The 67 wildcats completed as producers included 56 wells listed as oil pool openers, the others being extensioners or new pay discoveries. Production was found in Graham, Finney and Ford counties for the first time. Russell County with eight new pools and several extensions led the state in discoveries, Barton County was second with 8 strikes and Stafford County third with 7 new pools. Wildcats found gas or oil or both in 21 counties, while wildcat failures only were recorded in 17 counties in which outposts were drilled.

KANSAS (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BUTLER COUNTY:													
Augusta—						983	932	1,043	957	870	877	869	
Daily average	962	991	977	969	987	29,490	28,892	32,333	28,710	26,970	26,310	26,939	347,168
Month	29,822	27,748	30,287	29,070	30,597								
North Augusta—													
Daily average	385	420	402	440	489	472	432	415	436	401	382	391	
Month	11,935	11,760	12,462	13,200	15,159	14,160	13,392	12,865	13,080	12,431	11,460	12,121	154,025
Blankenship—													
Daily average	225	251	246	242	234	236	245	235	238	236	216	226	
Month	6,975	7,028	7,626	7,260	7,254	7,080	7,595	7,285	7,140	7,316	6,480	7,006	86,045
Brandt—													
Daily average	30	116	134	170	191	186	234	272	254	224	252	237	
Month	930	3,248	4,154	5,100	5,921	5,580	7,254	8,432	7,620	6,944	7,560	7,347	70,090
Elbing—													
Daily average	1,505	1,414	1,423	1,340	1,340	1,349	1,341	1,296	1,344	1,263	1,264	1,253	
Month	46,655	39,592	44,113	40,200	41,540	40,470	41,571	40,176	40,320	39,153	37,920	38,843	490,553
El Dorado—													
Daily average	8,446	8,227	8,543	8,528	8,572	8,563	8,071	8,492	8,206	8,012	7,812	7,901	
Month	261,826	230,356	264,833	255,840	265,732	256,890	250,201	263,252	246,180	248,372	234,360	244,931	3,022,773
Fox-Bush—													
Daily average	412	454	439	428	449	444	470	434	415	441	392	400	
Month	12,772	12,712	13,609	12,840	13,919	13,320	14,570	13,454	12,450	13,671	11,760	12,400	157,477
Garden—													
Daily average	215	175	215	211	216	217	193	199	193	197	191	192	
Month	6,665	4,900	6,665	6,330	6,696	6,510	5,983	6,169	5,790	6,107	5,730	5,952	73,497
Haverhill—													
Daily average	278	282	277	258	255	253	252	274	260	250	267	262	
Month	8,618	7,896	8,587	7,740	7,905	7,590	7,812	8,494	7,800	7,750	8,010	8,122	96,324
Keighley—													
Daily average	259	263	256	251	233	231	244	292	234	254	243	247	
Month	8,029	7,364	7,936	7,530	7,223	6,930	7,564	9,052	7,020	7,874	7,290	7,657	91,469
Kramer—													
Daily average	151	171	204	209	180	184	171	178	170	171	162	166	
Month	4,681	4,788	6,324	6,270	5,580	5,520	5,301	5,518	5,100	5,301	4,860	5,146	64,389
Leon—													
Daily average	123	138	130	127	130	126	84	102	81	88	88	84	
Month	3,813	3,864	4,030	3,810	4,030	3,780	2,604	3,162	2,430	2,728	2,640	2,604	39,495
McCullough—													
Daily average	244	255	528	433	426	439	388	403	393	352	296	290	
Month	7,564	7,140	16,368	12,990	13,206	13,170	12,028	12,493	11,790	10,912	8,880	8,990	135,531
Potwin—													
Daily average	1,038	1,007	972	999	1,008	997	907	921	878	862	866	858	
Month	32,178	28,196	30,132	29,970	31,248	29,910	28,117	28,551	26,340	26,722	25,980	26,598	343,942
Reynolds-Schaeffer—													
Daily average	342	312	303	327	289	294	303	328	351	315	302	307	
Month	10,602	8,736	9,393	9,810	8,959	8,820	9,393	10,168	10,530	9,765	9,060	9,517	114,753
Smock-Sluss—													
Daily average	173	175	183	180	175	177	174	180	182	165	166	161	
Month	5,363	4,900	5,673	5,400	5,425	5,310	5,394	5,580	5,460	5,115	4,980	4,991	63,591
Stern—													
Daily average	215	208	214	193	189	190	186	207	185	192	183	184	
Month	6,665	5,824	6,634	5,790	5,859	5,700	5,766	6,417	5,550	5,952	5,490	5,704	71,351
Young—													
Daily average	109	102	78	84	102	98	92	115	93	97	88	89	
Month	3,379	2,856	2,418	2,520	3,162	2,940	2,852	3,565	2,790	3,007	2,640	2,759	34,888
Miscellaneous—													
Daily average	882	1,033	1,340	486	469	418	451	324	388	420	813	771	
Month	27,342	28,924	41,540	14,580	14,539	12,540	13,981	10,044	11,640	13,020	24,390	23,901	236,441
GREENWOOD, WOODSON AND LYON COUNTIES:													
Atyeo, Pixley, Browning, Teeter and Scott Trend—													
Daily average	1,911	1,953	2,063	2,073	1,908	1,969	1,951	2,007	1,933	1,932	1,878	1,893	
Month	59,241	54,684	63,953	62,190	59,148	59,070	60,481	62,217	57,990	59,892	56,340	58,693	713,899
Burkett, Thrall, Polhamus and Sallyards Trend—													
Daily average	1,292	1,017	1,309	1,296	1,290	1,286	1,254	1,261	1,278	1,281	1,294	1,300	
Month	40,052	28,476	40,579	38,880	39,990	38,580	38,874	39,091	38,340	39,711	38,820	40,300	461,693
Virgil and North Virgil—													
Daily average	1,435	1,259	1,545	1,453	1,137	1,219	1,532	1,700	1,658	1,648	1,748	1,708	
Month	44,485	35,252	47,895	43,590	35,247	36,570	47,492	52,700	49,740	51,088	52,440	52,948	549,447
Seeley-Wick—													
Daily average	993	1,020	1,060	1,004	981	994	954	1,009	946	896	946	942	
Month	30,783	28,560	32,860	30,120	30,411	29,820	29,574	31,279	28,380	27,776	28,380	29,202	357,145
Demalorie-Sowder—													
Daily average	408	441	460	434	480	472	493	568	561	525	618	616	
Month	12,648	12,348	14,260	13,020	14,880	14,160	15,283	17,608	16,830	16,275	18,540	19,096	184,948
Winterscheid—													
Daily average	685	712	729	756	743	748	745	815	776	701	688	674	
Month	21,235	19,936	22,599	22,680	23,033	22,440	23,095	25,265	23,280	21,731	20,640	20,894	266,828
Madison—													
Daily average	651	659	641	646	640	650	619	619	601	602	585	590	
Month	20,181	18,452	19,871	19,380	19,840	19,500	19,189	19,189	18,030	18,662	17,550	18,290	228,134
Quincy—													
Daily average	1,094	1,088	1,098	1,103	990	982	1,189	1,153	1,093	812	832	831	
Month	33,914	30,464	34,038	33,090	30,690	29,460	36,859	35,743	32,790	25,172	24,960	25,761	372,941
Hamilton—													
Daily average	362	350	362	385	361	367	381	374	361	347	331	336	
Month	11,222	9,800	11,222	11,500	11,191	11,010	11,811	11,594	10,830	10,757	9,930	10,416	131,333
Lamont—													
Daily average	361	382	368	328	350	339	404	415	396	393	395	389	
Month	11,191	10,696	11,408	9,840	10,850	10,170	12,524	12,865	11,880	12,183	11,850	12,059	137,516
Miscellaneous—													
Daily average	1,254	1,142	1,315	1,363	1,270	1,262	1,146	1,112	1,013	1,066	1,113	1,097	
Month	38,874	31,976	40,765	40,890	39,370	37,860	35,526	34,472	30,390	33,046	33,390	34,007	430,566
FINNEY COUNTY:													
Daily average	.....	.....	.....	.....	.....	120	113	118	46	96	64	68	
Month	.....	.....	.....	.....	.....	3,600	3,503	3,658	1,380	2,976	1,920	2,108	19,145
EASTERN COUNTIES													
Daily average	6,169	6,366	6,940	7,010	6,722	6,916	7,532	7,613	7,338	6,652	6,707	6,669	
Month	191,239	178,248	215,140	210,300	208,382	207,480	233,492	236,003	220,140	206,212	201,210	206,739	2,514,585
First daily average	176,521	166,406	166,904	165,612	148,864	150,776	157,755	161,949	156,204	149,088	152,106	159,387	1,937,803
Month, 1938	5,472,151	4,659,373	5,174,024	4,968,360	4,614,784	4,523,280	4,890,405	5,020,429	4,685,100	4,621,728	4,563,480	4,940,976	58,134,090
Total 1937	5,244,673	5,236,644	5,866,936	5,837,230	6,253,785	5,908,470	6,228,861	6,062,763	5,921,190	5,820,022	5,344,650	5,461,208	69,158,432
Total 1936	4,343,751	4,002,348	4,675,296	4,835,370	4,754,687	4,442,040	4,839,441	5,160,601	4,917,180	4,995,805	4,816,320	5,301,651	57,084,490
Total 1935	4,189,340	4,094,412	4,623,154	4,373,670	4,610,940	4,436,880	4,710,884	4,462,140	4,411,260	4,702,979	4,279,920	4,468,867	53,364,446
Total 1934	3,360,865	3,173,324	3,958,142	3,939,840	4,083,134	3,971,070	4,122,659	3,971,100	3,607,200	3,850,634	3,721,830	3,994,319	45,754,117

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Annual Review

DISCOVERIES ALONG JACKSON TREND FEATURED SOUTHWEST TEXAS

By F. L. SINGLETON

The most significant feature of development in Southwest Texas during 1938 was the opening of a series of new pools along the Jackson trend that started a new type of trend play which is expected to gain momentum during the year. The district showed a decline in drilling activity, although a new high in the number of discoveries was recorded. There were 44 oil and gas fields opened, and important extensions and new sand discoveries were made in several of the older fields.

The total number of completed wells reached 2,568, a decrease of 522 from the previous year. Initial production of the completed wells was 295,350 bbls. Of the total 747 were dry holes and 105 gas wells.

Of the discoveries, probably the most outstanding were the South Alice field, Jim Wells County; Sun, Starr County; Kelsey, Jim Hogg County, and La Rosa in Refugio County. All of these fields are along the Frio-Vicksburg trend of the Jackson trend which was placed in the limelight in March with the completion of H. H. Howell No. 1 Lindsay & Reed, Jim Wells County, for an initial production of 177 bbls. of 44-gravity oil. The field is about 2½ miles southwest of the town of Alice centering in the La Vaca grant. While sand conditions have proven erratic resulting in new horizons being found at 5,000, 5,411 and 4,700 feet, production has been extended over approximately 3,500 acres which represents an estimated reserve of 63,500,000 bbls.

This prospective trend was extended southwesterly as far south as Starr County with the opening of the Sun field by Sun Oil Co. No. 1 McKinney, which flowed 180 bbls. of 45.6-gravity oil daily through a 5/32-inch choke. Sand showing oil was cored in the Frio at 4,851-59 feet, and the well was completed through perforated casing at 4,853-56½ feet. The structure has been defined by a dry hole approximately 1 mile south of production, while important extensions have been made to the north and northwest with production from the Vicksburg sand at approximately 5,100 feet.

North of the above field, approximately 12 miles and located in Jim Hogg County, Humble Oil & Refining Co. opened the Kelsey field with the completion of No. 2 Bass in the San Rafel grant. The well was drilled to a total depth of 4,754 feet, and was completed through perforated casing at 4,742-48 feet for an initial production of 112 bbls. of oil per day through an eighth-inch choke. The west side of the structure has been defined by a dry hole, although production was extended approximately 4,600 feet east into Brooks County with the completion of No. 1 McGill Brothers. The sand section in the extension well was logged at a uniform depth which indicates that the main part of the structure lies in Brooks County. The two discoveries are in the early stages of development, but have the appearance of being major pools.

Another field, opened shortly after South Alice, was Banderia in Jim Wells County, producing distillate. The discovery well was Magnolia Petroleum Co. No. 1

SOUTHWEST TEXAS

San Antonio District

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BRANYON:													
Daily Average	1,949	2,032	2,062	1,852	1,718	1,675	2,197	2,170	2,054	1,962	2,006	2,139	
Month	60,419	56,896	63,922	55,560	53,258	50,250	68,107	67,270	61,620	60,822	60,180	66,309	724,613
BUCHANAN:													
Daily average	279	263	260	207	497	454	178	181	159	159	154	168	
Month	8,649	7,364	8,060	6,210	15,407	13,620	5,518	5,611	4,770	4,929	4,620	5,208	89,966
BURDETTE:													
Daily average	27	66	213	175	62	57	54	32	49	52	104	114	
Month	837	1,848	6,603	5,250	1,922	1,710	1,674	992	1,470	1,612	3,120	3,535	30,572
CEDAR CREEK:													
Daily average	51	77	76	52	50	46	68	62	62	40	50	59	
Month	1,581	2,156	2,356	1,560	1,550	1,380	2,108	1,922	1,860	1,240	1,500	1,929	21,142
CHAPMAN:													
Daily average	249	254	278	209	210	208	211	213	207	217	180	209	
Month	7,719	7,112	8,618	6,270	6,510	6,240	6,541	6,603	6,210	6,727	5,400	6,479	80,429
DALE:													
Daily average	182	164	215	165	217	345	256	253	265	229	212	351	
Month	5,642	4,592	6,665	4,950	6,727	10,350	7,936	7,843	7,950	7,099	6,360	10,881	86,995
DARST CREEK:													
Daily Average	8,025	7,375	7,582	7,712	6,963	6,487	7,782	8,179	7,182	7,348	7,687	7,959	
Month	248,775	206,500	235,042	231,360	215,853	194,610	241,242	253,549	215,460	227,788	230,610	246,729	2,747,518
DOBROWOLSKI:													
Daily average	151	152	131	151	148	146	121	133	130	122	120	132	
Month	4,681	4,256	4,247	4,530	4,588	4,380	3,751	4,123	3,900	3,782	3,600	4,092	49,930
HILBIG:													
Daily average	382	343	356	356	327	291	347	353	294	296	293	297	
Month	11,842	9,604	11,036	10,680	10,137	8,730	10,757	10,943	8,820	9,176	8,790	9,207	119,722
LULING:													
Daily average	6,784	6,847	6,907	7,602	6,768	6,230	7,256	7,585	6,792	6,875	6,866	6,839	
Month	210,304	191,716	214,117	228,060	209,808	186,900	224,936	235,135	203,760	213,125	205,980	212,009	2,535,850
LYTON SPRINGS:													
Daily average	319	327	313	290	288	282	322	490	316	306	268	256	
Month	9,889	9,156	9,703	8,700	8,897	8,460	9,982	15,190	9,480	9,486	8,040	7,936	114,919
MINERVA:													
Daily average	177	191	202	201	186	177	218	186	206	222	165	172	
Month	5,487	5,348	6,262	6,030	5,766	5,310	6,758	5,766	6,180	6,882	4,950	5,332	70,071
OGDEN:													
Daily average	149	128	122	114	110	103	103	104	106	91	88	92	
Month	4,619	3,584	3,782	3,420	3,410	3,090	3,193	3,224	3,180	2,821	2,640	2,852	39,815
PEARSALL:													
Daily average	522	132	514	600	586	530	601	582	475	486	543	519	
Month	16,182	3,696	17,794	18,000	18,166	15,900	18,631	18,042	14,250	15,066	16,290	16,089	188,106
SALT FLAT:													
Daily average	4,131	3,870	3,952	3,952	4,161	3,782	3,982	3,898	3,850	4,005	4,264	4,271	
Month	128,061	108,360	122,512	118,560	128,991	113,460	123,938	120,838	115,500	124,155	127,920	132,401	1,464,696
SOMERSET:													
Daily average	656	634	613	584	570	541	597	566	535	582	530	501	
Month	20,336	17,752	19,003	17,520	17,670	16,230	18,507	17,546	16,050	17,042	15,900	15,531	209,087
VAN ORMY:													
Daily average	146	151	152	145	156	148	138	144	138	133	149	150	
Month	4,526	4,228	4,712	4,350	4,836	4,440	4,278	4,464	4,140	4,123	4,470	4,650	53,217
YTURRIA:													
Daily average	50	50	52	52	51	49	48	52	44	44	42	43	
Month	1,550	1,400	1,612	1,560	1,581	1,470	1,488	1,612	1,320	1,364	1,260	1,333	17,550
ZOBOROSKI:													
Daily average	125	103	141	148	146	133	96	93	86	82	89	83	
Month	3,875	2,884	4,371	4,440	4,526	3,990	2,976	2,883	2,580	2,542	2,670	2,573	40,310
MISCELLANEOUS FIELDS:													
Daily average	514	456	591	592	532	539	713	585	589	588	723	751	
Month	15,934	12,768	18,321	17,760	16,492	16,170	22,103	18,135	17,682	18,228	21,690	23,281	218,564
Daily average	24,767	23,488	24,670	25,055	23,644	22,128	25,188	25,747	23,433	23,723	24,441	25,003	24,286
Total 1938	767,777	657,664	764,770	751,650	732,964	663,840	780,828	798,157	703,002	735,405	733,230	775,093	8,864,380
Total 1937	711,946	634,000	714,395	695,940	846,300	796,170	774,566	792,919	754,710	774,814	738,000	821,130	9,055,790
Total 1936	713,434	657,227	721,091	705,240	746,263	726,030	746,666	753,503	686,550	708,969	694,170	691,624	8,550,767
Total 1935	709,962	648,564	728,469	714,750	717,866	709,410	719,789	725,741	685,290	699,267	693,000	697,066	8,449,174

Miscellaneous pools and their total production in the 12-month period were: Alta Vista 2,776 bbls., Batesville 465 bbls., Carroll 11,132 bbls., Cedar Creek 21,142 bbls., Chicon Lake 8,982 bbls., Dunlap 28,122 bbls., Dunlay 4,884 bbls., Gas Ridge 2,609 bbls., Kimbro 365 bbls., Lacoste 1,523 bbls., Larremore 23,826 bbls., Lone Oak 977 bbls., Manda 2,582 bbls., Manford 7,731 bbls., Medina 4,662 bbls, Nash Creek 17,782 bbls., Thrall 13,388 bbls., Yost 14,391 bbls., Yturria 17,550 bbls., Byersville Plug 18,016 bbls., Coffee 1,587 bbls., Chriesman 6,558 bbls., Shattel 186 bbls., Sisterdale 518 bbls., Walnut Creek 6,810 bbls. Total 218,564 bbls.

Mateo Valdez, southeast of Alice in the La Anima Sola grant. The well was drilled to 6,419 feet, and completed after 7-inch casing was cemented at 6,408 feet. Several wildcats are now drilling in Jim Wells County and two have logged showings that warrant setting casing.

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas
Agua Dulce	12	259	1	5
Alfred	9	557	6	0
Alice (South)	64	7,829	8	2
Alta Mesa	10	1,508	2	0
Alworth	4	5	1	2
Alta Verde	4	42	3	0
Alta Vista	1	5	0	0
Amagosa	2	0	1	1
Aviator	1	0	1	0
Barbacoas	6	103	2	1
Banderia	2	0	0	2
Batesville	1	0	1	0
Benavides	133	16,803	6	8
Bird Island	1	0	0	1
Branyon	40	2,281	6	1
Buchanan	4	32	1	0
Burdette Wells	6	362	0	0
Burnell (South)	14	1,215	4	1
Bruni	2	12	1	0
Byersville	2	25	1	0
Campana	1	20	0	0
Casa Blanca	30	1,387	2	5
Calliham	10	92	3	0
Chapman Ranch	1	0	1	0
Chittim	2	30	0	1
Cedro Hill	1	50	0	0
Clara Driscoll	23	3,423	1	1
Chriseman	1	35	0	0
Cole	2	0	2	0
Colmena	3	28	0	1
Comitas	16	395	4	0
Charco Redondo	5	0	5	0
Colorado	3	390	0	0
Chacon Lake	15	21	3	0
Charmousca	6	283	2	0
Carolina Tex	1	0	1	0
Cuellar	1	78	0	0
Dale	27	727	13	0
Darst Creek	37	2,978	4	0
Dunlap	9	177	2	0
Driscoll	10	1,462	0	0
Dunlay	6	73	3	0
East Premont	1	480	0	0
Escobas	28	802	4	0
Ezzell	62	5,813	10	1
Eagle Hill	30	1,745	3	2
East Telferner	4	261	1	0
East White Point	30	4,061	2	0
East Placedo	9	707	2	1
East Plymouth	2	0	1	1
East Premont	3	389	0	0
Flour Bluff	22	2,008	7	1
Fox	1	156	0	0
Fitzsimmons	41	5,748	3	0
Government Wells	1	47	0	0
Heyser	104	16,271	1	5
Hilbig	1	3	0	0
Hoffman	129	13,040	8	3
Hughes	2	0	2	0
Hondo	1	1	0	0
Ina	7	33	3	0
Junction	1	10	0	0
Jacob	3	6	2	0
Jenclens	1	8	0	0
Keeran	4	641	0	2
Kelsey	4	247	2	0
Killam	26	1,315	6	2
Kingsville	3	0	3	0
Labbe	5	0	3	2
La Rosa	12	1,711	1	0
La Blanca	1	90	0	0
La Coste	2	51	1	0
Las Animas	6	351	1	1
La Reforma	2	89	0	0
Loma Alta	5	5	4	0
Loma Novia	1	0	1	0
Longhorn	1	194	0	0
Loma Valdez	1	0	0	1
Los Plachos	2	51	1	0
Lost Mule	1	0	1	0
Luby	90	11,607	4	0
Luling	61	6,419	5	1
Lundell	30	3,048	0	0
Lytton Springs	3	5	2	0
Lucas	1	0	0	1
Los Olmos	1	0	1	0
Lopez	1	0	1	0
McAllen	1	15	0	0
McCampbell	50	7,951	1	0
Margo	3	0	3	0
McFaddin	19	1,864	0	2
Mirando Valley	12	903	2	1
Mercedes	3	220	0	0
Maetze	1	0	0	1
Mestenas	1	159	0	0
Midway	6	1,717	1	0
Mitchell Lake	4	110	2	0
Munson	14	325	8	0
Normanna	2	0	2	0
North Pettus	1	40	0	0
North Agua Dulce	2	0	0	2
North Kohler	2	145	0	0
North Normanna	1	60	0	0
North Killam	1	131	0	0
North Creek	4	2	2	0
Oakville	5	131	2	1
O'Hern	13	433	3	2
Oilton	70	6,813	10	5
Pearsall	2	126	0	1
Piedre De Lumbre	18	1,613	2	0
Piedra Pintas	1	0	1	0
Placedo	6	387	2	1
Plymouth	21	3,241	1	0
Peters	3	0	1	2
Plummer	6	234	2	1
Port Lavaca	1	0	1	0
Premont	6	150	1	2
Rancho Solo	6	449	1	0
Refugio	39	7,195	5	0
Rhodes	4	0	1	3
Riddle	4	624	1	0
Rincon	1	0	0	1
Riverside	1	0	0	1
Richard King	11	963	0	1
Rockdale	14	71	1	1
Ramirena	1	0	0	1
Ricaby	5	300	0	1
Rutledge	1	0	1	0
Sacatosa	4	0	3	1
Salt Flat	38	1,954	3	0
Samfordyce	27	2,638	1	4
San Jose	4	15	2	1
Sarco Creek	1	34	0	0
Saxet	69	6,316	10	3
Saxet Heights	1	135	0	0
Seven Sisters	43	3,879	11	0
Stratton	4	453	0	0
Sweden	5	69	2	2
Sarnosa	2	35	1	0
San Domingo	1	0	0	1
South Calliham	4	50	2	0
South Clara Driscoll	11	1,284	0	1
Sun	4	420	1	0
Somerset	2	10	0	1
Taft	4	623	0	1
Tomoconnor	137	109,744	3	1
Tulsita	3	3	1	1
Telferner	4	0	4	0
Tesoro	6	333	3	0
Von Ormy	26	114	1	0
Walnut Creek	4	174	1	0
West Saxet	67	10,473	12	1
Weslaco	1	62	0	0
West Tuleta	1	0	1	0
West Dunlap	1	10	0	0
White Point	1	50	0	0
Woodsboro	1	0	0	1
Miscellaneeus	451	0	450	1
Total	2,568	295,350	747	105

Completions by Months

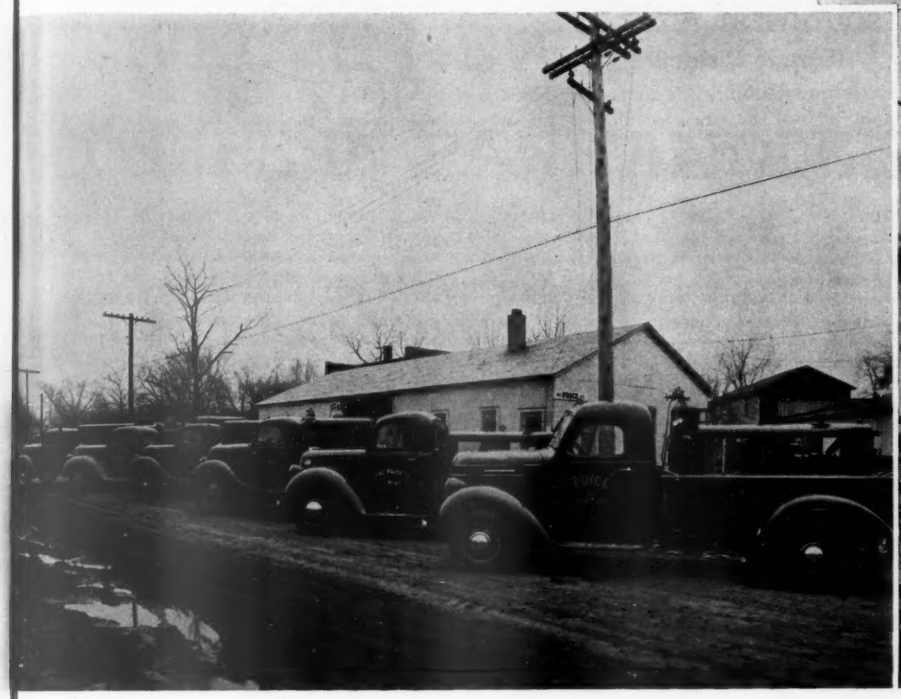
Month—	Comp.	Prod.	Abd.	Gas
January	206	24,558	55	18
February	199	21,000	57	7
March	241	23,296	73	6
April	214	21,572	62	14
May	184	23,188	42	6
June	205	18,467	62	6
July	280	43,147	92	8
August	214	24,680	54	7
September	197	25,340	53	6
October	256	29,901	82	9
November	192	21,554	66	10
December	180	18,647	49	8
Total	2,568	295.350	747	105

Three miles south of Woodsboro, Refugio County, I. J. Allen and others opened the La Rosa field with No. 2 Rooke, in the Jose Miguel Aldrete 6¼ League. This well was drilled to 6,875 feet, and was completed as a distillate producer through perforated casing at 5,395-5,400 feet. The rig was moved back to No. 1 Rooke, a dry hole that was quit at 4,568 feet, and the hole was deepened at 5,960 feet and oil pro-

NEW DISCOVERIES, SOUTHWEST TEXAS DISTRICT IN 1938

Pool, county, company and farm name—	Survey	Date of completion	Producing formation	Producing depth	Initial production	No. prod. wells Dec. 31
Alfred, Jim Wells, Rowan & Hope No. 1 Adams	T.&N.O. No. 19	2-24	Pettus	3,325-29	3 bbls. per hour, 5/32-in. choke	3
Bandera, Jim Wells, Magnolia Pet. Co. No. 1 Valdez	La Anima Sola Gr.	8-3	Frio-Vicksburg	6,408-19	Distillate	2
Bird Island (Laguna Madre Bay), Kleberg, Pure Oil Co. No. 1 State	Tract 168	11-18	Frio	7,210-79	Gas well	1
Casa Blanca, Duval, Magnolia Pet. Co. No. 1 Duval County Ranch Co.	No. 291	6-2	Cole	1,185-90	74 bbls. pumping	25
Campana, McMullen, Wm. Spice No. 1 Edrington	No. 57	10-7	Gov. Wells	2,509-19	20 bbls. daily, ½-in. and ⅝-in. ck.	1
Cedro Hill, Duval, Magnolia Pet. Co. No. 2 Duval County Ranch Co.	No. 189	11-18	Mirando	1,445-51	50 bbls. daily, pumping	1
Charco Blanco, Starr, Sun Oil Co. No. 1 Young	Porcion 79	8-18	Jackson	2,710-20	Gas well	1
Chreisman, Burleson, Red Bank Oil Co. No. 1 Coffield	E. Soute	5-17	Edwards lime	6,167-72½	35 bbls. oil, 160 bbls. wtr., pumping	1
Dunlay, Medina, Ewing Oil Co. No. 1 Riff	No. 42	4-18	Serpentine	620-716	50 bbls. pumping	1
E. Plymouth, San Patricio, Humble Oil & Ref. Co. No. 1 Smith-Tolbert	Taft Farm Lands, Lot 2, Sec. 37	4-25	Heterostegina	4,808-10	Gas well	1
E. Telferner, Victoria, W. Y. Bowles No. 1 Robertson	T. G. Burnham	1-26	Frio	5,100-14	40 bbls. daily, 7/32-in. choke	2
E. White Point, San Patricio, Plymouth Oil Co. No. 1 Brigham	Sec. 62, Coleman Fulton Lands	2-15	Frio	5,661-64	216 bbls. daily, 9/64-in. choke	..
Fitzsimmons, Duval H. J. Porter, No. 1 Fitzsimmons	J. Poitevent No. 291	5-28	Cockfield-Gov. Wells	4,200-13 3,595-3,600	108 bbls. daily, 5/32-in. choke	39
Kelsey, Jim Hogg-Brooks, Humble Oil & Ref. Co. No. 2 Bass	San Raphel Grant	9-2	Frio-Vicksburg	4,742-48	112 bbls. daily, ⅛-in. choke	2
La Coste, Bexar, R. W. Fair No. 1 Medina Irrigation	J. H. Pickens	1-28	Anacacho lime	1,140-96	20 bbls. daily, pumping	3
La Reforma, Starr, Wheelock & Collins No. 1-A Guerra	Santa Cruz Grant	7-2	Frio-Vicksburg	5,927-29	39 bbls. daily, ⅛-in. choke	2
La Rosa, Refugio, Geophysical Service No. 2 Rooke	Jose Maria Aldrete League	7-31	Frio	5,395-5,400 5,902-05½ 6,322-26	Distillate 118 bbls., ⅛-in. choke 151 bbls. daily, ⅛-in. choke	12
Loma Valdez, Webb, Nessly and others No. 3 Bruni	C.&M.R.R. No. 449	1-7	Mirando	11,804-08	Dry gas well	1
Longhorn, Duval, Longhorn Drilling Co. No. 1 Miller	Santos Flores Grant No. 25, Sec. 28	12-2	Hockley	4,892-98	194 bbls. daily, 5/32-in. choke	1
Los Plachos, Duval, Schimmel No. 5 Hagist	B.S.&F. No. 265	4-12	Gov. Wells	2,193-96	51 bbls. fluid daily, pumping	1
McAllen, Hidalgo, R. E. Harding No. 1 Lynn	Hidalgo Canal Subd., Lot 8, Blk. 8	8-18	Frio-Vicksburg	5,970-74	Distillate	1
Mitchell Lake, Bexar, Luling Oil & Gas Co. No. 1 Russel	Fernando Rodriquez	5-20	Austin chalk	1,116-80	35 bbls. oil, 115 bbls., pumping	1
Munson, McMullen, Albright No. 1 Nueces Land & Cattle Co.	B.S.&F. No. 119	9-16	Mirando	1,202-11	54 bbls. daily, pumping	6
North Agua Dulce, Nueces, Union Prod. Co. No. 1 Simmons	V. L. Jaen	2-4	Heterostegina	4,832-62	Distillate	2
North Killam, Webb, Taylor Ref. Co. No. 1 Zapata	J. G. Zapata No. 334	12-16	Gov. Wells	2,045-54	131 bbls. daily, pumping	1
North Normanna, Bee, Dirks Bros. No. 1 Beck	Chittim Miller Ranch Subd.	2-15	Pettus	4,215-28	60 bbls. daily, 5/32-in. choke	1
North Somerset, Bexar, H. S. Ball-A. B. Dubose No. 1 Miller	J. Christopher No. 55	7-19	Taylor	1,357-72	5 bbls. daily, pumping	1
Ramerina, Live Oak, Hanthon-Nelson No. 1 McNeil	A. Parks	3-11	Cockfield	5,076-78	Gas well	1
Riddle, Bastrop, Ogden & Riddle No. 1 C. L. Riddle	H. Warnell	6-24	Dale lime	1,665-1,747	20 bbls. daily, pumping	4
Rincon, Starr, Transwestern Oil Co. No. 3 Slick	No. 266	2-18	Frio-Vicksburg	4,212-30	Distillate	1
Riverside, Nueces, Stanolind Oil & Gas Co. No. 1 Clark	Nueces Co. Vegetable Gard. Subd.	12-16	Heterostegina	4,888-93	Gas well	1
Sacatosa, Starr, Harvey & Henderson No. 1 Salinas	Canales Salinas	10-7	Mirando	1,657-61	Gas well	1
San Jose, McMullen, Schimmell No. 2 Kountz	E.T.R.R. No. 5	8-19	Cole	1,156-62	Gas well, some distillate, ¼-in. ck.	1
Schattel, Frio, Humble Oil & Ref. Co. No. 1 Schley	No. 174	10-10	Austin chalk	4,696-4,800	I.P. 16 bbls. oil and S.W.	1
South Alice, Jim Wells, H. H. Howell No. 1 Lindsay-Reed	Lavaca Grant	4-22	Frio-Vicksburg	5,375-85	177 bbls. daily, ⅛-in. choke	59
Spiller, Guadalupe, Spiller No. 1 Wright	H. Cottle	3-18	Austin chalk	2,012-2,298	69 bbls., pumping	3
Sarco, Goliad, Swiger No. 1-B Wood	John Shearn	1-23	Vicksburg	5,009-15½	34 bbls., pumping	1
Sun, Starr, Sun Oil Co. No. 1 McKinney	No. 242	9-2	Frio-Vicksburg	4,850-5,100	180 bbls. daily, 5/32-in. choke	3
Tesoro, Duval, Arkansas Fuel Oil Co. No. 1 Cuellar	No. 96	6-24	Pettus	5,109-17	78 bbls. daily	4
Tulsita, Bee, H. Aid and others No. 2 Hall	George Kerr	...	Pettus	3,582-88	Gas well	1
Turkey Creek (West Saxet), Nueces, L. A. Douglas No. 1 McKenzie	No. 417	1-8	Frio and Het.	6,400 5,810-20 5,614-16 3,400 4,000	360 bbls., 15 hrs., ⅜-in. choke	53
Walnut Creek, Caldwell, Fred Shield No. 1 Walker	Pablo Martinez	6-22	Serpentine	1,230-36	74 bbls. daily, pumping	3
Westlaco, Hidalgo, Atlantic Ref. Co. No. 1 McCalip	Blk. 175, Llano Grande Grant	2-9	Frio-Vicksburg	8,634-42	62 bbls. distillate, 5 bbls. S.W.	1
Woodsboro, Refugio, Rutherford Oil Co. and Barnsdall Oil Co. No. 1 E. Neinman	Estaben Lopez	12-28	Oligocene	5,235-47	Gas well	1

THESE H. C. PRICE CO. WELDING CREWS HAVE SUCCESSFULLY WELDED MORE THAN 300 STRINGS OF CASING IN THE ILLINOIS FIELD.



ANNOUNCEMENT

ELECTRIC WELDING OF OIL WELL CASING

BY

H. C. PRICE CO.

After thorough investigation and preparation, H. C. PRICE CO. has formed a division of its organization exclusively for the electric welding of oil well casing.

The welding crews are composed of only experienced welders who have been constantly employed by us on our pipe line operations.

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Phone 832

SAN FRANCISCO

duction was established by perforating casing at 5,902-05½ feet. Additional development opened production from a deeper sand at 6,322-26 feet on the northeast side of the field and production from this sand was later extended 4,000 feet south which assures the field three productive sands. The sand is believed to be Frio.

McCampbell Extension

One of the most important extensions to be made was at the McCampbell field in Aransas and San Patricio counties by the completion of Frank Grote No. 1 Garlock, 1½ miles south of production near the Aransas Pass city limits. Production was obtained by perforating casing at 7,124-33 feet. The comple-

(Continued on Page 170)

SOUTHWEST TEXAS

(Laredo District)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
ALTA MESA:													
Daily average	420	412	423	509	464	482	561	599	499	459	498	523	
Month	13,020	11,536	13,113	15,270	14,384	14,460	17,391	18,569	14,970	14,229	14,940	16,213	178,095
AVIATOR:													
Daily average	339	332	350	369	287	260	335	329	320	348	265	301	
Month	10,509	9,296	10,850	11,070	8,897	7,800	10,385	10,199	9,600	10,788	7,950	9,331	116,675
CHARAMOUSA:													
Daily average	341	244	273	265	239	230	239	311	251	245	245	278	
Month	10,571	6,832	8,463	7,950	7,409	6,900	7,409	9,641	7,530	7,595	7,350	8,618	96,268
COLE:													
Daily average	6,794	6,182	8,193	11,553	11,410	10,020	7,787	11,153	6,789	6,555	6,546	6,738	
Month	210,614	173,096	153,983	346,590	353,710	300,600	241,397	345,743	203,670	203,205	196,380	208,878	2,937,866
COLMENA:													
Daily average	356	281	275	301	285	260	318	329	265	266	262	275	
Month	11,036	7,868	8,525	9,030	8,835	7,800	9,858	10,199	7,950	8,246	7,860	8,525	105,732
COMITAS:													
Daily average	543	497	592	528	456	492	616	604	625	608	649	686	
Month	16,833	13,916	18,352	15,840	14,136	14,760	19,096	18,724	18,750	18,848	19,470	21,246	209,971
CUERITAS:													
Daily average	593	497	651	674	691	608	714	717	586	621	598	596	
Month	18,383	13,916	20,181	29,220	21,421	18,240	22,134	22,227	17,580	19,251	17,940	18,476	229,969
DRISCOLL:													
Daily average	204	3,112	240	2,222	1,369	1,235	252	1,853	2,409	214	1,662	1,760	
Month	6,324	87,136	7,440	66,660	42,439	37,050	7,812	57,443	72,270	6,634	49,860	54,560	495,628
EAGLE HILL:													
Daily average	267	241	255	254	338	211	250	366	399	515	547	629	
Month	8,277	6,748	7,905	7,620	7,378	6,330	7,750	10,416	11,970	15,965	16,410	19,599	126,368
ESCOBAS:													
Daily average	2,021	1,978	1,888	1,851	1,579	1,457	2,125	2,106	2,047	2,007	1,694	1,940	
Month	62,651	55,384	58,528	55,530	48,949	43,710	65,875	65,286	61,410	62,217	50,820	60,140	690,500
EZZELL:													
Daily average	1,548	1,455	1,745	1,791	1,682	923	31	1,724	2,984	890	2,086	3,630	
Month	47,988	40,740	54,095	53,730	52,142	27,690	961	53,444	89,520	27,590	62,580	112,530	623,010
GOVERNMENT WELLS:													
Daily average	13,294	12,195	12,395	12,384	10,910	9,930	12,201	12,108	10,434	10,427	9,520	10,011	
Month	412,114	341,460	384,245	371,520	338,210	297,900	378,231	375,348	313,020	323,237	285,600	310,341	4,131,226
HOFFMAN:													
Daily average	2,389	2,127	2,371	2,531	2,354	2,247	2,798	3,124	2,820	3,342	3,336	4,156	
Month	74,059	59,556	73,501	75,930	72,974	67,410	86,738	96,844	84,600	103,602	100,080	128,836	1,024,130
IGNACIO:													
Daily average	97	128	184	265	254	251	452	547	550	902	883	905	
Month	3,007	3,584	5,704	7,950	7,874	7,530	13,560	16,957	16,500	27,962	26,490	28,055	165,173
JACOB:													
Daily average	372	497	610	712	518	467	539	496	428	338	440	453	
Month	11,532	13,916	18,910	21,360	16,058	14,010	16,709	15,376	12,840	10,478	13,200	14,043	178,432
KILLAM:													
Daily average	977	934	1,098	1,023	1,086	970	1,021	858	778	648	795	735	
Month	30,287	26,152	34,038	30,690	33,666	29,100	31,651	26,598	23,340	20,088	23,850	22,785	332,245
KOHLER:													
Daily average	139	142	153	134	250	127	148	129	119	193	85	86	
Month	4,309	3,976	4,743	4,020	7,750	3,810	4,588	3,999	3,570	5,983	2,550	2,666	51,964
LABBE:													
Daily average	323	282	284	281	247	225	253	258	252	218	227	245	
Month	10,013	7,896	8,804	8,430	7,659	6,750	7,843	7,998	7,560	6,758	6,810	7,595	94,114
LA BLANCA:													
Daily average	312	433	552	630	587	650	572	523	431	409	459	470	
Month	9,672	12,124	17,112	18,900	18,197	19,500	17,732	16,213	12,930	12,679	13,770	14,570	183,399
LOMA NOVIA:													
Daily average	15,059	13,743	14,024	14,787	12,974	11,370	13,241	13,173	11,291	11,185	10,745	11,340	
Month	466,829	384,804	434,744	443,610	402,194	341,100	410,471	408,363	338,730	346,735	322,350	351,540	4,651,470
LOPEZ:													
Daily average	6,902	6,479	6,711	6,584	5,981	5,412	6,339	6,282	5,469	5,323	5,160	5,418	
Month	213,962	181,412	208,041	197,520	185,411	162,360	196,509	194,742	164,070	165,013	154,800	167,958	2,191,798
LOS OLMOS:													
Daily average	113	120	118	121	96	50	115	116	98	94	89	91	
Month	3,503	3,360	3,658	3,630	2,976	1,500	3,565	3,596	2,940	2,914	2,670	2,821	37,133
McMULLEN:													
Daily average	174	155	194	162	158	148	187	164	212	177	169	176	
Month	5,394	4,340	6,014	4,860	4,898	4,440	5,797	5,084	6,360	5,487	5,070	5,456	63,200
MIRANDO VALLEY:													
Daily average	30	20	60	133	309	248	248	239	228	265	254	281	
Month	930	560	1,860	3,990	9,579	7,440	7,688	7,409	6,840	8,215	7,620	8,711	70,842
MOCA:													
Daily average	434	397	397	397	367	326	372	374	319	325	319	332	
Month	13,454	11,116	12,307	11,910	11,377	9,780	11,532	11,594	9,570	10,075	9,570	10,292	132,577
NORTH SWEDEN:													
Daily average	5,997	7,936	9,820	10,786	10,278	10,038	11,537	11,819	10,312	10,516	10,534	11,155	
Month	185,907	222,208	304,420	323,580	318,618	301,140	357,647	366,389	309,360	325,996	316,020	345,815	3,677,100
OILTON:													
Daily average	1,446	1,564	1,916	2,295	2,286	2,139	2,270	2,110	1,812	1,561	1,760	1,700	
Month	44,826	43,792	59,396	68,850	70,866	64,170	70,370	65,410	54,360	48,391	52,800	52,700	695,931
PIEDRA LUMBRE:													
Daily average	923	880	986	1,022	960	893	1,087	1,124	958	918	915	960	
Month	28,613	24,640	30,566	30,660	29,760	26,790	33,697	34,844	28,740	28,458	27,450	29,760	353,978
RANDADO:													
Daily average	327	264	282	293	204	190	266	237	306	229	234	202	
Month	10,137	7,392	8,742	8,790	6,324	5,700	8,246	7,347	9,180	7,099	7,020	6,262	92,239
RICABY:													
Daily average	304	314	278	202	329	179	242	218	216	221	209	319	
Month	9,424	8,792	8,618	6,060	10,199	5,370	7,502	6,758	6,480	6,851	6,270	9,889	92,213
SAMFORDYCE:													
Daily average	2,794	2,397	2,359	2,345	2,038	2,062	2,893	2,786	2,451	2,391	2,630	2,453	
Month	86,614	67,116	73,129	70,350	63,178	61,860	89,683	86,366	73,530	74,121	78,900	76,043	900,890
SARNOSA:													
Daily average	652	658	668	699	591	590	666	652	564	579	540	567	
Month	20,212	18,424	20,708	20,970	18,321	17,700	20,666	20,212	16,920	17,949	16,200	17,577	225,859
SCHOTT:													
Daily average	387	361	471	393	367	354	369	367	322	388	367	394	
Month	11,997	10,108	14,601	11,790	11,377	10,620	11,439	11,377	9,660	12,028	11,010	13,214	139,221
SEVEN SISTERS:													
Daily average	8,805	7,915	8,026	8,078	7,519	6,925	6,830	7,828	6,934	6,568	7,290	7,681	
Month	272,955	221,620	248,806	242,340	233,089	207,750	211,730	242,668	208,020	203,608	218,700	228,111	2,739,397
SWEDEN:													
Daily average	231	281	333	316	267	247	184	211	253	212	240	294	
Month	7,161	7,868	10,323	9,480	8,277	7,410	5,704	6,541	7,590	6,572	7,200	9,114	93,240
MISCELLANEOUS:													
Daily average	642	679	614	788	744	778	1,352	1,884	2,641	2,151	3,804	4,288	1,702
Month	19,902	19,012	19,034	23,640	23,064	23,340	41,905	58,404	79,230	66,681	114,120	132,922	621,254
Daily average	76,561	76,132	76,563	87,678	80,374	72,994	79,396	87,687	77,372	72,308	76,056	81,780	78,765
Total 1938	2,373,019	2,131,696	2,373,459	2,630,340	2,491,594	2,189,820	2,461,271	2,718,328	2,321,160	2,241,548	2,281,680	2,535,192	28,749,107
Total 1937	2,110,542	2,338,672	2,635,930	2,285,520	2,426,029	2,318,700	2,356,087	2,873,948	2,778,990	2,659,427	2,486,340	2,625,625	29,895,810
Total 1936	1,367,658	1,357,548	1,610,884	1,689,750	1,853,397	1,802,520	1,784,778	1,859,907	1,890,400	1,982,109	1,896,750	2,037,861	21,133,562
Total 1935	949,747	862,176	1,029,603	1,047,038	1,091,634	1,062,030	1,079,952	1,054,279	1,093,530	1,169,568	1,255,680	1,297,567	12,992,796

Miscellaneous pools and their total production in the 12 months period were: Alberbacoas 19,998 bbls., Barbacoas 3,662 bbls., Carolina Texas 2,184 bbls., Charco Redondo 2,748 bbls., Colorado 58,079 bbls., Engleman 14,025 bbls., Henne-Winch-Farias 2,759 bbls., Hords Creek 9,385 bbls., Laurel 4,075 bbls., Loma Alta 30,873 bbls., Loma Vista 3,241 bbls., Los Piachos 576 bbls., Mercedes 29,117 bbls., Peters 42,079 bbls., Rio Grande 27,958 bbls., Ricon 11,624 bbls., Roma 1,951 bbls., Sarco 819 bbls., Thomas Lockhart 5,001 bbls., Weslaco 1,988 bbls., Piedra Pintas 305 bbls., Casa Blanca 76,373 bbls., Fitzsimmons 199,999 bbls., Las Animas 9,056 bbls., Kelsey 7,857 bbls., La Reforma 5,315 bbls., Munson 9,826 bbls., North Killam 930 bbls., San Jose 450 bbls., Sun 11,695 bbls., Tesoro 27,306 bbls. Total, 621,254 bbls.

Annual Review

TWELVE NEW POOLS IN WEST TEXAS, THREE IN PANHANDLE SECTOR

By D. H. STORMONT

The discovery of 12 oil-producing areas in 10 counties, together with extensive spreads to established fields, highlighted the results of drilling activities during 1938 in the West Texas district.

New oil-producing spots were opened in Andrews, Cochran, Crockett, Crane, Gaines, Garza, Pecos, Reeves, Stonewall, and Yoakum counties. Six of the new pools had more than seven completed wells at the start of 1939. New production in the district falls short of the all-time high established in 1937. There were 2,045 wells completed in 1938 for an aggregate initial production of over a million and a half barrels, while the 2,806 wells completed in 1937 produced an initial of slightly over 2 million barrels. Several counties showed an increase in new production, with Yoakum leading, it having had an increase of over 100,000 bbls., or from 4,433 bbls. in 1937 to 130,556 bbls. in 1938.

The most important field extension during the past year was the linking of the Wasson pool of Gaines County and the Denver pool of Yoakum County, which occurred in the fore part of the year. During the closing months of 1938, there was an indication that the combined Wasson-Denver pool would link together with the Bennett pool of Yoakum County. Several rather undetermining link wells have been drilled as outposts to both of the fields; however, the actual joining of the areas will necessitate the drilling of several more wells in the intervening territory.

Perhaps the most important of the new areas is the Dunes pool in Crane County. Seven wells were completed in this field, discovered by the Magnolia Petroleum Co. on the University lands, and it had a total estimated reserve of almost 15,000,000 bbls. as of January 1, 1939. The field is about 3½ miles northwest of the Church-Fields-McElroy area and is in the eastern part of the county.

In Crockett County, Choate & Hogan opened a pool in April when they completed their No. 1 University, in the northwestern part of the county, for 104 bbls. of

WEST TEXAS FIELDS DISCOVERED DURING 1938

County—	Location	Discovery well	Date	Depth	Formation	Production	No. wells	Name of pool
Pecos	Just south of Pecos River	Hoss & Downey No. 1 Cities Service-Cordez	January	1,974-2,044	Yates sand	150 bbls. day	46	Payton pool
Crockett	Northwestern part of county	Choate & Hogan No. 1 University	April	T.D. 1,538	Big lime	104 bbls. day	8	Crockett pool
Crane	3½ miles northwest of Church-Fields-McElroy area	Magnolia Petroleum No. No. 1 University	April	3,264-3,325	Big Lake lime	32 bbls. day	7	Dunes pool
Cochran	Extreme southeastern corner of county	P. N. Wiggins No. 1 Dean	April	T.D. 5,077	Big lime	21 bbls. day	2	Dean
Gaines	4 miles west of Seminole field	Frick-Osage Drilling Co. No. 1 Atlantic-Riley	May	5,068-5,098	Big lime	135 bbls. day		
Yoakum	4½ miles west of Denver field	Shell Pet. Corp. No. 1 D. Roberts	May	T.D. 5,100	Big lime	566 bbls. day	7	Roberts area of Wasson pool
Andrews	On Andrews-Ector county line	Rogers & Rogers No. 1 O. B. Holt	June	4,470-4,541	Big Lake lime	253 bbls. day	12	Holt area
Andrews	Extreme southern part of county and 1 mile north of Holt area	Rhodes & Tompkins No. 1 E. Cowden	June	4,160-4,220	Big lime	1,062 bbls. day	10	Emma pool
Pecos	¾ mile northeast of Masterson pool, Section 103, Block 10, H.&G.N. Survey	W. H. Street No. 1 Shearer	July	1,400-1,432	Pecos Valley sand	125 bbls. day	12	Shearer pool
Stonewall	Northwestern part of county, Section 293, Block D, H.&T.C. Survey	Stonewall Oil No. 1 Carlisle	July	5,169-5,176		300 bbls. day	2	Carlisle pool
Reeves	Section 10, Block 56, T.&P. Survey	Frankley-Rice No. 1 Tunstill	October	3,274-3,310		2,500,000 feet gas per day		
Garza	Extreme eastern edge county, Section 25, Block 2, H.&G.N. Survey	Gulf Oil Corp. No. 1-B Swenson	December	7,327-7,334		Officially ungauged		

WEST TEXAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BENNETT:													
Daily average	926	1,178	1,682	2,273	2,733	2,727	2,110	2,602	2,502	2,909	3,239	3,251	
Month	28,703	32,985	52,130	68,181	84,734	81,818	65,406	80,674	75,068	90,166	97,165	100,777	857,807
BIG LAKE:													
Daily average	7,206	6,844	6,819	6,848	6,258	6,265	6,737	6,882	6,210	6,271	6,994	6,820	
Month	223,379	191,632	211,391	205,426	194,005	187,961	208,843	213,356	186,307	194,395	209,825	211,129	2,437,649
CHURCH-FIELDS:													
Daily average	6,255	5,737	5,753	5,826	4,915	4,918	5,667	5,618	4,889	4,903	4,910	4,920	
Month	193,892	160,624	178,357	174,788	152,352	147,539	175,663	174,147	146,661	151,978	147,309	152,531	1,955,841
COWDEN, CRANE:													
Daily average	1,703	1,688	1,692	1,808	1,659	1,662	1,751	1,666	1,510	1,424	1,344	1,417	
Month	52,801	47,254	52,464	54,249	51,426	49,856	54,276	51,647	45,314	44,155	40,319	43,940	587,701
COWDEN (North):													
Daily average	6,441	6,028	6,334	6,175	5,506	5,494	7,297	7,595	6,666	6,798	7,022	7,052	
Month	199,658	168,795	196,364	185,253	170,695	164,833	226,200	235,430	199,972	210,737	210,654	218,619	2,387,210
COWDEN (South):													
Daily average	293	292	299	232	261	261	293	288	244	233	258	262	
Month	9,083	8,171	9,259	6,949	8,082	7,826	9,096	8,941	7,324	7,232	7,744	8,120	97,827
DEEP ROCK:													
Daily average	230	214	211	204	179	189	195	209	188	191	185	183	
Month	7,143	5,980	6,537	6,120	5,555	5,667	6,057	6,473	5,639	5,907	5,559	5,679	72,316
DUGGAN:													
Daily average	158	247	263	388	392	385	426	453	384	389	385	385	
Month	4,898	6,916	8,143	11,647	12,140	11,552	13,216	14,057	11,518	12,063	11,563	11,935	129,648
EAVES:													
Daily average	253	315	215	306	309	307	316	331	303	290	294	296	
Month	7,851	8,830	6,656	9,191	9,575	9,211	9,800	10,268	9,087	8,991	8,815	9,172	107,447
EMPEROR:													
Daily average	1,267	1,128	1,278	1,311	1,199	1,210	1,373	1,463	1,122	1,215	1,249	1,253	
Month	39,287	31,577	39,604	39,315	37,171	36,303	42,554	45,358	33,671	37,677	37,478	38,839	458,834
ESTES:													
Daily average	7,219	6,751	7,036	7,240	6,385	6,374	7,117	7,436	6,213	6,171	6,225	6,233	
Month	223,775	189,019	218,128	217,213	197,933	191,217	220,632	230,508	186,386	191,305	186,769	193,223	2,446,108
FOSTER:													
Daily average	3,720	3,689	4,213	4,414	4,208	4,216	5,183	5,606	5,625	5,989	6,248	6,281	
Month	115,305	103,298	130,611	132,407	130,433	126,480	160,667	173,780	168,739	185,644	187,441	194,711	1,809,516
FUHRMAN:													
Daily average	1,083	1,069	1,321	1,361	1,319	1,321	1,395	1,145	1,205	1,252	1,211	1,236	
Month	33,573	29,939	40,949	40,831	40,874	39,636	43,253	35,508	36,135	38,815	36,321	38,316	454,150
GOLDSMITH:													
Daily average	11,370	10,945	11,646	12,378	11,266	11,116	17,384	17,680	16,517	15,898	17,477	17,496	
Month	352,468	306,460	361,018	371,345	349,256	333,488	538,900	548,085	495,506	492,833	524,319	542,383	5,216,061
GRAYSON:													
Daily average	137	137	136	142	104	106	115	134	115	112	108	106	
Month	4,256	3,829	4,209	4,269	3,233	3,114	3,551	4,141	3,454	3,463	3,249	3,294	44,062

(Continued on Next Page)

Let INTERNATIONAL TRUCKS Cut Your Hauling Costs

THERE IS ONE LINE of trucks that meets every hauling requirement and gives you the greatest value per truck dollar!

That's the International line!

Whether you need light pick-up trucks for utility work, larger sizes with two-speed rear axles, powerful six wheelers, or any other sizes, there are Internationals to fit your jobs *exactly.*

And as for truck value! One look at an International will show you it's a sturdy, rugged truck, built to take a lot of punishment throughout its long life. And when you get into the details, you really begin to appreciate the *quality* of International construction and the money-saving features engineered into these trucks . . . all designed to give owners the best in performance at low operating cost.

When Internationals get on the job, they are protected by International Harvester's famous after-sale service. No matter where these trucks travel, they are never far from an International branch or dealer.

Investigate International Trucks now and see what they offer for your business. The nearby dealer or Company-owned branch will give you a demonstration at your convenience.

Left: An International 3 to 4-ton Model D-50 Truck, with an International Power Unit and equipment to drill in and clean out wells, mounted on it. This outfit is used by Beckman, Inc., Odessa, Tex,. for cleaning out wells by their method.

Below: This powerful six-wheel truck is one of the Internationals owned by a major company in California. It is used in the Ventura district.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
180 North Michigan Avenue Chicago, Illinois

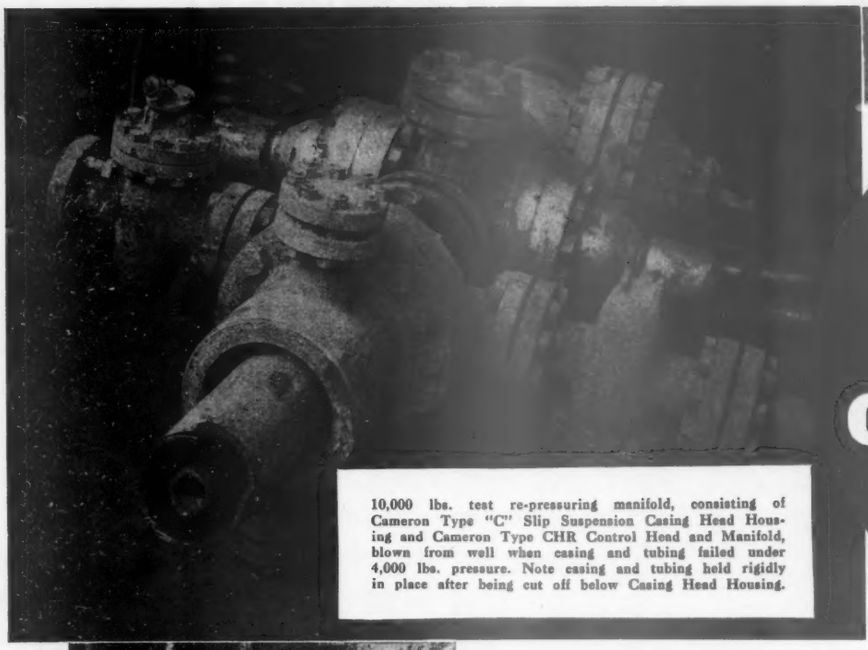
INTERNATIONAL TRUCKS

WEST TEXAS (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
GULF-McELROY:													
Daily average	4,097	3,988	3,973	4,151	3,589	3,606	3,796	3,966	3,277	3,370	3,356	3,370	
Month	127,021	111,651	123,158	124,529	111,244	108,174	117,665	122,948	98,295	104,478	100,694	104,482	1,354,339
HALLEY:													
Daily average	531	478	494	496	422	416	486	483	417	411	411	416	
Month	16,457	13,395	15,319	14,891	13,068	12,471	15,062	14,970	12,498	12,749	12,341	12,900	166,121
HARPER:													
Daily average	2,480	3,637	4,955	7,114	8,438	8,707	9,262	10,107	9,435	9,572	9,800	9,792	
Month	76,866	101,832	153,599	213,422	261,564	261,221	287,111	313,314	283,056	296,746	294,007	303,562	2,846,300
HENDERSON:													
Daily average	3,120	2,842	3,046	3,024	2,637	2,611	3,091	2,996	2,515	2,570	2,569	2,580	
Month	96,708	79,575	94,435	90,705	81,733	78,333	95,809	92,886	75,440	79,653	77,083	79,984	1,022,344
HENDRICK:													
Daily average	10,823	10,983	11,463	11,370	11,646	11,410	10,927	10,835	11,136	11,309	10,995	11,900	
Month	335,501	307,528	355,354	341,011	361,027	342,300	338,747	335,885	334,089	350,578	329,868	368,894	4,100,782
HOWARD-GLASSCOCK:													
Daily average	13,714	14,710	15,093	15,098	13,269	13,276	14,907	15,221	13,168	13,523	13,362	14,550	
Month	425,135	411,880	467,880	452,954	411,353	398,287	462,119	471,852	395,040	419,200	400,865	451,059	5,167,624
HURDLE:													
Daily average	134	136	129	128	122	124	141	184	182	210	206	202	
Month	4,158	3,794	4,006	3,827	3,783	3,716	4,378	5,707	5,469	6,496	6,187	6,260	57,781
IATAN-EAST HOWARD:													
Daily average	6,615	6,393	6,504	6,453	5,874	5,869	6,374	6,360	5,668	5,631	54,04	5,563	
Month	205,074	179,000	201,621	193,581	182,088	176,068	197,593	197,145	170,027	174,559	162,130	172,449	2,211,335
JORDAN:													
Daily average	1,092	1,186	1,387	1,578	1,553	1,540	1,884	2,022	1,978	2,071	2,163	2,070	
Month	33,845	33,194	43,009	47,326	48,155	46,207	58,408	62,696	59,347	64,197	64,895	64,168	625,447
KERMIT:													
Daily average	16,699	15,990	16,354	16,627	14,565	14,602	16,668	16,927	14,594	14,751	14,592	14,760	
Month	517,682	447,720	506,974	498,813	451,518	438,072	516,700	524,753	437,820	457,286	437,777	457,560	5,692,675
KEYSTONE:													
Daily average	2,460	2,447	2,536	2,562	2,434	2,418	2,874	3,007	2,552	2,580	3,072	3,102	
Month	76,273	68,521	78,605	76,868	75,447	72,544	89,086	93,232	76,557	79,975	92,163	96,168	975,439
LECK:													
Daily average	477	480	532	482	361	372	308	241	277	241	217	220	
Month	14,800	13,433	16,505	14,473	11,187	11,157	9,548	7,484	8,303	7,461	6,500	6,820	127,671
MASON:													
Daily average	333	400	398	399	349	344	378	343	197	257	243	247	
Month	10,318	11,210	12,335	11,957	10,802	10,325	11,712	10,644	8,895	7,967	7,298	7,661	121,124
MASTERSON:													
Daily average	596	668	605	616	596	590	565	498	413	356	393	382	
Month	18,487	18,697	18,741	18,476	18,488	17,706	17,512	15,438	14,388	11,051	11,793	11,844	192,621
McCAMEY:													
Daily average	13,149	14,636	14,903	14,888	13,465	13,456	14,855	15,330	13,850	13,702	13,847	13,834	
Month	407,616	409,800	461,994	446,636	417,424	403,691	460,493	475,229	415,506	424,762	415,400	428,850	5,167,401
McMILLAN:													
Daily average	106	115	106	106	109	102	77	73	74	64	68	66	
Month	3,289	3,228	3,288	3,165	3,365	3,060	2,395	2,259	2,228	1,998	2,052	2,046	32,373
McCLINTIC:													
Daily average	891	845	900	966	841	849	940	1,065	892	953	919	952	
Month	27,633	23,669	27,889	28,988	26,064	25,470	29,139	33,013	26,768	29,547	27,585	29,512	335,277
MEANS:													
Daily average	1,835	1,728	1,807	1,889	1,703	1,801	2,377	2,584	2,453	2,386	2,557	2,561	
Month	56,896	48,392	56,016	56,658	52,789	54,030	73,690	80,110	73,581	73,968	76,723	79,391	782,244
NETTERVILLE:													
Daily average	231	272	252	252	234	231	233	228	223	198	196	200	
Month	7,152	7,622	7,801	7,566	7,250	6,927	7,221	7,061	6,700	6,125	5,888	6,192	83,505
PAYTON:													
Daily average	67	148	180	273	479	480	820	1,049	1,267	1,404	1,636	1,629	
Month	2,080	4,134	5,582	8,205	14,855	14,412	25,418	32,506	37,998	43,512	49,076	50,507	288,285
PECOS VALLEY:													
Daily average	462	509	541	536	676	661	690	749	814	846	834	849	
Month	14,318	14,242	16,771	16,083	20,957	19,836	21,387	23,215	24,433	26,210	25,022	26,319	248,793
PENWELL:													
Daily average	3,872	3,542	3,642	3,566	3,044	3,101	3,907	4,028	3,479	3,539	3,560	3,540	
Month	120,021	99,187	112,913	106,993	94,377	93,019	121,103	124,867	104,375	109,721	106,795	109,740	1,303,111
SAND HILLS:													
Daily average	1,297	1,215	1,325	1,287	1,156	1,149	1,298	1,143	1,135	1,178	1,169	1,172	
Month	40,200	34,012	41,074	38,611	35,827	34,470	40,235	35,419	34,062	36,507	35,077	36,332	441,826
SCARBOROUGH:													
Daily average	1,640	1,550	1,534	1,572	1,392	1,404	1,619	1,687	1,547	1,633	1,677	1,637	
Month	50,826	43,396	47,543	47,179	43,146	42,126	50,189	52,303	46,408	50,612	50,306	50,747	574,781
SEALEY:													
Daily average	435	408	417	392	350	357	388	371	359	318	303	316	
Month	13,484	11,437	12,929	11,751	10,851	10,699	12,043	11,492	10,779	9,863	9,081	9,796	134,205
SEMINOLE:													
Daily average	184	311	351	362	343	352	421	466	358	376	317	331	
Month	5,718	8,716	10,888	10,852	10,639	10,560	13,062	14,455	10,749	11,648	9,498	10,261	127,046
SHIPLEY:													
Daily average	1,412	1,283	1,365	1,392	1,216	1,212	1,363	1,462	1,230	1,262	1,220	1,258	
Month	43,779	35,932	42,324	41,758	37,683	36,372	42,253	44,830	36,911	39,110	36,606	38,998	476,556
SLAUGHTER:													
Daily average	24	60	105	152	201	190	565	602	629	664	592	616	
Month	752	1,681	3,266	4,562	6,218	5,694	17,511	18,656	18,879	20,591	17,769	19,096	134,675
SNYDER:													
Daily average	330	429	525	833	728	733	1,028	1,246	1,273	1,575	1,771	1,746	
Month	10,217	12,025	16,274	24,997	22,553	21,994	31,859	38,611	38,205	48,835	53,126	54,126	372,822
TAYLOR-LINK:													
Daily average	1,316	1,391	1,357	1,393	1,354	1,360	1,228	1,274	1,203	1,149	1,171	1,167	
Month	40,811	38,943	42,053	41,803	41,970	40,811	38,060	39,502	36,109	35,631	35,127	36,177	466,997
TOBORG:													
Daily average	1,830	1,806	1,854	1,803	1,688	1,691	1,720	1,775	1,569	1,492	1,564	1,562	
Month	56,741	50,563	57,479	54,095	52,326	50,726	53,319	55,025	47,069	46,246	46,934	48,422	618,945
WADDELL:													
Daily average	1,309	1,236	1,238	1,266	1,126	1,132	1,225	1,258	1,142	1,080	1,082	1,079	
Month	40,588	34,608	38,374	37,981	34,895	33,960	37,964	38,991	34,267	33,474	32,473	33,449	431,024
WARD (North):													
Daily average	5,620	5,293	5,476	5,598	4,806	5,010	5,781	5,605	5,094	4,958	5,133	5,140	
Month	174,221	148,211	169,749	167,950	148,975	150,289	179,226	173,747	152,816	153,691	153,997	159,346	1,932,218
WARD (South):													
Daily average	11,153	10,754	11,586	11,001	9,419	9,406	9,427	9,214	8,318	8,179	8,254	8,260	
Month	345,758	301,098	359,178	330,040	291,990	282,180	292,250	285,641	249,538	253,537	247,615	256,060	3,494,885
WASSON:													
Daily average	2,211	2,912	3,540	4,335	4,638	4,627	5,902	6,692	6,646	7,198	8,504	8,515	
Month	68,552	81,534	109,736	130,035	143,764	138,817	179,850	207,464	199,393	223,115	255,117	263,962	2,001,339
WORLD:													
Daily average	847	752	889	898	705	711	810	893	786	854	889	876	
Month	26,243	21,067	27,571	26,968	21,866	21,338	25,110	27,677	23,578	26,462	26,678	27,150	301,708
WESTBROOK:													
Daily average	794	759	771	788	707	705	746	757	686	709	674	679	
Month	24,615	21,246	23,886	23,632	21,930	21,156	23,122	23,454	20,585	21,981	20,220	21,058	266,885
WHEAT:													
Daily average	1,361	1,369	1,317	1,260	1,192	1,192	1,271	1,295	1,237	1,147	1,178	1,154	
Month	42,176	38,320	40,842	37,794	36,965	35,758	39,409	40,160	37,105	35,554	35,338	35,785	455,206
YATES:													
Daily average	20,048	18,422	18,679	18,633	16,014	15,816	18,058	18,397	15,500	21,228	21,024	21,872	
Month	621,477	515,824	579,037	558,999	496,421	474,488	559,800	570,317	464,987	658,069	630,736	678,041	6,808,196
SHEARER:													
Daily average	.....	.....	.....	.....	.....	.....	.....	74	246	471	697	682	
Month	.....	.....	.....	.....	.....	.....	.....	2,308	7,373	14,600	20,905	21,145	66,331
MISCELLANEOUS:													
Daily average	362	369	479	498	411	395	582	652	665	656	513	551	
Month	11,216	10,332	14,842	14,952	12,736	11,864	18,055	20,197	19,956	20,329	15,384	17,089	186,952
Daily average	184,219	182,713	191,505	196,941	180,541	180,584	206,249	212,216	192,309	200,111	205,342	208,609	195,226
Total 1938	5,710,776	5,115,958	5,936,660	5,908,270	5,596,757	5,416,811	6,393,727	6,578,700	5,769,279	6,203,455	6,160,270	6,466,878	71,257,541
Total 1937	5,405,968	5,391,326	6,579,662	6,145,724	6,609,318	6,385,562	6,321,050	7,401,923	6,722,469	6,502,608	5,810,106	6,013,245	75,288,961
Total 1936	4,553,683	4,423,051	5,162,895	5,187,630	5,444,065	5,060,640	5,214,076	5,340,215	4,850,340	5,291,607	4,613,850	5,187,013	60,329,065
Total 1935	4,552,381	4,149,964	4,600,741	4,392,450	4,469,983	4,305,750	4,596,711	4,497,139	4,406,970	4,601,268	4,669,260	4,745,759	53,988,376
Total 1934	3,824,284	3,618,748	4,081,832	4,051,380	4,346,572	4,172,130	4,315,820	4,551,513	4,440,960	4,095,472	3,932,190	4,273,164	49,704,065

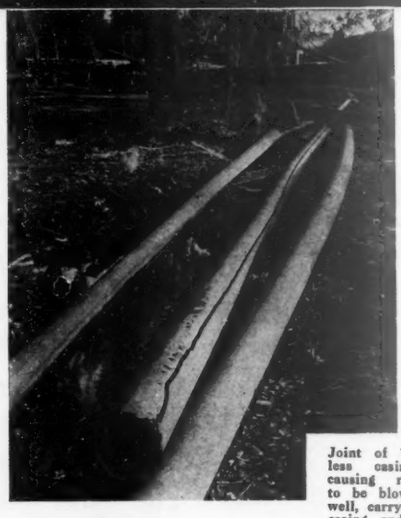
Miscellaneous pools and their production for the year were as follows, in barrels: Bashara 33,429, Beddo 567, Carter 6,077 Dean 16,776, Dobbs 2,498, Dune 1,579, Edwards 3,006, Garza 12,724, Herrington 11,674, Irion 5,949, Johnson 13,434, Webb-Ray 8,532, White-Baker 4,804, Crocket 7,040, Shearer, in January, 541, Simpson 1,686, Moore 19,033, Monroe 10,859, Northwest 12,901, Parker 11,160, West 2,683. Total, 186,952 bbls.



10,000 lbs. test re-pressuring manifold, consisting of Cameron Type "C" Slip Suspension Casing Head Housing and Cameron Type CHR Control Head and Manifold, blown from well when casing and tubing failed under 4,000 lbs. pressure. Note casing and tubing held rigidly in place after being cut off below Casing Head Housing.

DRAMATIC PROOF

CAMERON
SLIP-SUSPENSION CASING HEAD



Joint of 7"—Grade "D" seamless casing split lengthwise, causing re-pressuring manifold to be blown 150 feet from the well, carrying with it 3 joints of casing and 3 joints of tubing.

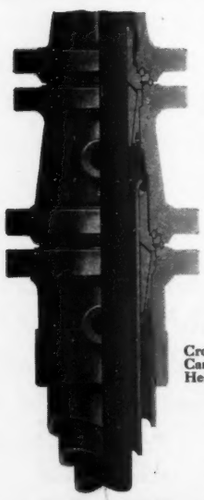
A dramatic demonstration of the strength and rigidity of the Cameron Type "C" Slip Suspension Casing Head was provided recently when a 10,000 lbs. test re-pressuring manifold, flanged above the casing head, was torn from the surface pipe and hurled through the side of a steel derrick for a distance of approximately 150 feet.

Under 4,000 lbs. in-put pressure, a joint of 7"—24-lb. Grade "D" seamless pipe split lengthwise, as illustrated herewith. The 4,000 lbs. pressure caused the 10¾" surface pipe to bell out and collapse at the thread made up in bottom of the Cameron Casing Head Housing. The 7" pipe then parted three joints from the surface. Tubing also parted at this point, and the re-pressuring manifold was blown through the side of the derrick.

The three joints of 7" pipe shown were carried with the manifold, being held rigidly to it by the Cameron Slip-Suspension Casing Head Housing. Three joints of tubing, gripped between the rams of a Cameron Type CHR Control Head, also were carried with the manifold.

When the 7" casing and the tubing were cut off below the casing head with a welding torch, both strings were found to be perfectly concentric, and as rigidly supported as when they were originally locked in position. The manifold was returned to the shop and dismantled for inspection, where it was found that the 7" pipe remained unmoved and unswaged in the slips, and that the construction weld at the top of the auxiliary welding hanger remained exactly as when applied. After the routine inspection, the casing head was again assembled and placed in service.

To operators interested in the constructional details of a casing head that will easily withstand every demand that can be made upon it, complete information concerning Cameron Slip-Suspension Casing Heads will gladly be provided on request.



Cross-section illustration of Cameron Type "C" Casing Heads in a 3-string hook-up.

Left—Top view of hanger assembly, after dismantling re-pressuring manifold, showing construction weld around casing in exactly the same condition as when applied. This weld prevented pipe from being swaged in slips.

Right—Bottom view of hanger assembly showing slips undisturbed.

CAMERON IRON WORKS, INC.
711 MILBY STREET, HOUSTON, TEXAS
EXPORT: 74 Trinity Place, New York, N. Y.

oil per day from a total depth of 1,538 feet. At the close of the year there had been seven more wells added to the field (Crockett), and the recoverable oil in the pool was estimated at 4,500,000 bbls., based on 6,000 bbls. recovery per acre from its then proven 750 acres.

Showing the most rapid development of any newly discovered area, the Payton pool of northern Pecos County completed 58 wells during the year. Discovered by Hoss & Downey's No. 1 Cities Service-Cordez in January, the area has been limited to about 2,500 productive acres having a total estimated recovery of about 7,500,000 bbls.

Two other new areas showing considerable promise are the Emma pool and the Holt pool, both in southern Andrews County. The Holt pool, on the Andrews and Ector county line, and discovered by Rogers & Rogers at their No. 1 O. B. Holt, had 12 completed wells as of January 1, and its reserve oil estimate was placed at about half a million barrels. The Emma pool, just north of the Holt area, had 10 producers as the year closed and had a proven area of about 640 acres, giving it an estimated reserve of about 3½ million barrels.

Field Extensions

The Wasson-Denver pool of Gaines and Yoakum counties showed the widest expansion of any area in West Texas. At the start of the year the Wasson pool in Gaines County and the Denver pool in Yoakum County were several miles apart. The linking of these fields was a continuous process, accomplished by the drilling of several link wells. On February 1 the area was first thought to be one large structure of about 18,000 acres. By the end of March this had been increased to 25,000 acres, and as the year passed the half-way mark the area had an estimated 30,000 acres. Outposts continued to be drilled both to the east and to the west, and as the year closed there were well-based indications that the large structure would include the seven-well Roberts area, about 3 miles west of the field, and the Bennett pool, about 4½ miles northeast. The Wasson-Denver area had, at the close of the year, about 40,000 acres included within its scope and an estimated reserve of over 300 million barrels of oil. Should extension development in 1939 prove the field to include the Bennett and the Roberts pools, it will be by far the largest single field in West Texas and will cover some 70 or 80 square miles and will include around 55,000 acres.

Slaughter Pool Expands

The Slaughter pool of southern Hockley County showed extensive expansion, with a total of 8,000 acres having been added to its productive territory by extensions on both the east and west side of the area. At the start of 1938 there were 2,000 acres considered proven or semiproven; however, as the year closed there were a total of 10,000 proven or semiproven acres within its limits, and its total estimated recoverable amount of oil was placed at 50,000,000 bbls.

Ordovician Search Declined

Wildcat exploration for deep Ordovician production declined during 1938, with only about six or seven tests having been drilled, all of which were dry and abandoned. The most important of these deep exploratory tests was the Magnolia Petroleum Co. No. 1-A Tex-Mex-McKee, in the Imperial area of northern Pecos County. This test was in the process of drilling and testing for over 12 months and was finally abandoned in September at a total depth of 6,267 feet, where sulfur water was encountered in the Ellenburger lime.

WEST TEXAS

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Andrews	63	75,117	14	2
Bailey	2	0	2	0
Borden	1	0	1	0
Brewster	3	0	3	0
Cochran	10	1,748	3	0
Coke	3	0	3	0
Concho	4	0	4	0
Crane	95	98,437	12	1
Crockett	24	2,162	8	0
Culberson	4	0	4	0
Dawson	2	0	2	0
Ector	638	701,456	9	0
Edwards	3	0	3	0
Gaines	43	29,187	14	0
Garza	2	0	2	0
Glasscock	4	1,054	2	0
Hockley	15	5,702	4	0
Howard	154	111,272	14	0
Irion	2	0	2	0
Jeff Davis	1	0	1	0
Loving	11	962	4	0
Martin	1	0	1	0
Mitchell	4	227	1	0
Menard	4	0	4	0
McCulloch	4	25	2	1
Nolan	1	0	1	0
Pecos	146	24,610	38	6
Reagan	3	0	3	0
Reeves	4	0	3	1
Runnels	7	11	5	0
Schleicher	2	0	1	1
Scurry	4	99	2	0
Sterling	5	0	5	0
Stonewall	7	468	5	0
Sutton	1	0	1	0
Terrell	2	0	2	0
Terry	3	0	3	0
Tom Green	4	0	4	0
Upton	168	102,217	20	0
Val Verde	4	25	1	0
Ward	211	127,807	19	2
Winkler	215	173,112	1	2
Yoakum	161	130,556	8	0
Total 1938	2,045	1,568,254	241	16

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	185	111,735	15	0
February	170	109,807	23	3
March	202	175,043	17	1
April	165	116,768	18	3
May	186	147,264	22	1
June	178	156,441	18	2
July	142	125,553	15	0
August	193	147,438	33	0
September	149	109,718	19	2
October	148	128,876	18	1
November	177	122,365	25	1
December	150	117,246	18	2
Total 1938	2,045	1,568,254	241	16
Total 1937	2,806	2,018,229	331	11
Difference	1,586	915,473	193	24

In the Panhandle

Three producing areas were opened in the Panhandle district, two as gas fields and one as an oil reserve. Sherman County received a new gas field when Indian Territory Illuminating Oil Co. tapped a sweet gas reserve from the 2,800-foot level. The well was completed for a gauge of 30,000,000 feet of gas from a plugged-back depth of 2,705-2,800 feet. The area promises to be of great importance in the future, for it is located between the huge gas reservoir in Moore County to the south, and the gas fields in Texas County, Oklahoma, and the Hugoton, Kansas, fields to the north.

A gas field was opened in southwestern Gray County late in April when Lone Star Gas Co. No. 1 Fowler was completed for 25,000,000 feet of gas from the granite wash formation at a total depth of 2,500 feet.

Early in June Carson County received a new oil pool when Northern Natural Gas Co. No. 1 J. A. Daner, Section 237, Block B-2, H.&G.N. Survey, 6 miles southwest of the Pampa oil field, was gauged at 484 bbls. per day. Little development is predicted for this new oil area, since the well was drilled with the expectation of adding to the company's gas reserve.

Wildcat Exploration

Wildcatting interests in the Panhandle area were centered, as the year closed, on two tests, one each in Potter County and Collingsworth County. In June Sinclair Prairie Oil Co. staked its No. 1 W. H. Bush, Section 23, Block 6, and about 14 miles northwest of Amarillo. The test is projected to 8,000 feet and is on a block of 20,000 acres. The structure already was proven productive of gas from the Permian formation, and a portion of it underlies the Government's helium plant and wells in the Panhandle field. As the year closed, the test had passed the 6,000-foot mark, and the results of the exploration should be known in the next few months.

PANHANDLE

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Armstrong	1	0	1	0
Carson	75	13,294	3	34
Childress	2	0	2	0
Cottle	2	0	2	0
Collingsworth	3	777	2	0
Dallam	1	0	1	0
Dickens	3	0	3	0
Gray	161	65,688	3	12
Hall	1	0	1	0
Hansford	1	0	1	0
Hutchinson	250	115,087	1	17
Lamb	1	0	1	0
Moore	27	780	0	25
Parmer	1	0	1	0
Ochiltree	1	0	0	1
Potter	2	0	0	2
Roberts	1	0	1	0
Sherman	2	0	1	1
Wheeler	26	639	2	13
Total 1938	561	196,265	26	105

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	72	27,241	5	17
February	53	16,972	3	9
March	55	21,085	2	10
April	28	14,183	1	0
May	57	25,263	1	10
June	60	21,250	2	9
July	29	8,537	2	8
August	51	14,671	3	12
September	32	8,783	3	6
October	42	13,723	2	5
November	48	12,494	2	13
December	34	12,057	0	6
Total 1938	561	196,265	26	105
Total 1937	830	312,029	33	156
Difference	269	115,764	7	51

PANHANDLE FIELDS DISCOVERED DURING 1938

County—	Location	Discovery well	Date	Depth	Formation	Production	No. wells	Name of pool
Gray	Southwestern part of county	Lone Star Gas Co. No. 1 Fowler	April	2,500	Granite wash	25,000,000 feet gas	1	
Sherman	Southwestern part of county	Indian Territory Illuminating Oil Co. No. 1 Davis	January	2,705-3,116	Granite wash	30,000,000 feet gas	1	
Carson	6 miles southwest of Pampa field	Northern Natural Gas Co. No. 1 J. A. Daner	June			484 bbls. day	1	

TEXAS PANHANDLE

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
GRAY COUNTY:													
Daily average	30,616	29,010	30,719	30,031	27,262	28,627	32,442	33,317	28,709	28,446	28,779	29,303	
Month	949,101	812,282	952,292	900,933	845,116	858,810	1,005,712	1,032,819	861,277	881,831	863,370	908,400	10,871,943
HUTCHINSON COUNTY:													
Daily average	22,711	20,109	22,760	22,995	19,537	20,325	21,713	22,108	19,223	19,642	20,175	21,031	
Month	704,037	563,046	705,756	689,846	605,653	609,757	673,094	685,348	576,684	608,900	605,259	651,969	7,679,349
CARSON COUNTY:													
Daily average	6,317	5,981	6,760	6,810	6,213	5,812	7,156	7,328	6,296	6,444	6,264	6,478	
Month	195,832	167,472	190,957	204,299	192,611	174,371	221,837	227,161	188,882	199,766	189,916	200,812	2,353,916
MOORE COUNTY:													
Daily average	1,349	1,251	1,329	1,274	1,171	1,183	1,287	1,207	1,054	1,115	1,134	1,270	
Month	41,815	35,042	41,198	38,224	36,305	35,494	39,897	37,421	31,620	34,568	34,017	39,362	444,963
WHEELER COUNTY:													
Daily average	6,107	5,837	6,309	6,011	5,915	5,862	6,979	6,834	5,914	5,901	5,683	5,877	
Month	189,310	183,440	195,579	180,332	183,365	175,866	216,346	211,850	177,424	182,940	170,499	182,189	2,229,140
Daily average	67,100	62,188	67,283	67,121	60,098	61,810	69,577	70,794	61,196	61,549	62,102	63,960	64,601
Total 1938	2,080,095	1,741,282	2,085,782	2,013,634	1,863,050	1,854,298	2,156,886	2,194,599	1,835,887	1,908,005	1,863,061	1,982,732	23,579,311
Total 1937	2,092,717	2,079,000	2,366,695	2,283,120	2,602,062	2,576,445	2,460,148	2,519,401	2,367,037	2,372,282	2,162,963	2,223,531	28,105,401
Total 1936	1,918,900	1,702,039	1,908,856	1,855,770	2,009,203	1,841,880	1,924,201	1,908,918	1,834,170	1,920,202	1,883,700	1,923,271	22,631,110
Total 1935	1,833,743	1,725,864	1,974,173	1,801,110	1,893,790	1,796,910	1,847,135	1,685,284	1,632,300	1,721,740	1,837,920	1,917,040	21,667,009
Total 1934	1,310,432	1,386,644	1,714,982	1,656,600	1,805,471	1,716,090	1,871,253	1,844,872	1,740,330	1,772,549	1,724,940	1,808,757	20,352,910

Annual Review

MANY DISCOVERIES AND EXTENSIONS IN NORTH-CENTRAL TEXAS

By D. H. STORMONT

Wildcat exploration, which led to the discovery of 24 new producing areas and six new producing horizones for established fields in West Central Texas district, and seven new fields and four new producing horizons for established fields in the North Texas district, marked one of the most profitable wildcat exploration campaigns in several years.

New oil areas were opened in 13 West Central Texas counties and five North Texas counties. Jones County headed the list with 10 new pools while Young County was second with seven new producing spots. Probably the most important discoveries in the Central Texas district included the deep horizon for the Ivy pool of Shackelford County, the Steffens pool in Jones County, and the Avoca townsite pool, also in Jones County.

The Ivy pool was discovered in 1937 from a depth of 1,933 feet and was opened to deep 3,200-foot production in January of 1938. Since the field's discovery there have been 16 wells drilled to the deep horizon and seven to the original shallow level. The deep pay in this field has proved the most prolific, and consequently has received the most development. As the year closed there were about 200 acres of proven terri-

DISCOVERIES IN NORTH TEXAS IN 1938

County—	Location	Discovery well	Date	Depth	Formation	Prod. gauge	No. wells	Name of field	Remarks
Jack	7 mi. N of Jacksboro	Hanlon-Buchanan No. 1 E. M. Meyers	January	3,432-50		20 bbls. in 3 hrs.	..		
Archer	On Wilson ranch in N part county	Hull & Silk No. 1 Wilson	March	3,800	K.M.A. lime	3,000 bbls. per day	5	Hull-Silk pool	
Wilbarger		Phillips Pet. Co. and King Oil Co. No. 1 W. T. Way	May	T.D. 2,900		176 bbls. per day	..		
Cooke	In Walnut Bend area in N part of county	Sinclair Prairie Oil Co. No. 1 J. M. Best	June	T.D. 4,900	Lower Bend	2,000 bbls. per day	2	Walnut Bend	
Archer	North offset to No. 1 Wilson which opened Hull-Silk pool	Blackwell O. & G. Co. and Helmerich & Payne No. 2 Wilson-McCrory	July	4,351-57	Bend	121 bbls. in 3 hrs.	6		Deeper horizon for Hull-Silk pool
Wichita	1½ mi. N of Holliday, Archer County	King Oil Co. and Madden & Goldsmith No. 1 Jackson	July	2,630-40	Canyon sand	83 bbls. per day	12	Holliday pool	
Wilbarger	In Rock Crossing pool, Sec. 42, Blk. 4, H.&T.C. Sur.	Phillips Pet. Co. No. 26-A Waggoner	July	4,746-65		100 bbls. per day	..		Deeper horizon for Rock Crossing
Cooke	W. W. Fulton Sur., Abst. 1251, 20 mi. W of Walnut Bend area	Whitfield, Pearson & Grimes No. 1 Voth	July	T.D. 1,802	Ellenburger lime of Ordovician age	8,000,000 C.F.G.	2	Voth	The second well was an oil well
Archer	Blk. 44, A.T.N.C. L. Sur., 4 mi. E of Hull-Silk pool	Fain-McGaha Oil Corp. No. 1 McCrory	August	4,727-58	Lower Bend	160 bbls. in 30 min.	1		Considered a deeper horizon for the Hull-Silk area
Wichita	2 mi. S of Wichita Falls, Blk. 1, State Asylum Lands	Continental Oil Co. and Pet. Prod. Co. No. 1 State	September	5,129-5,375	Marble Falls of Bend	60 bbls. per day	1		
Wilbarger	In Castlebury pool, Sec. 78, Blk. 14, H.&T.C. Sur.	Phillips Pet. Co. No. 1 Servatius	October	2,627-39	Milam sand	150 bbls. per day	1		Deeper horizon for Castlebury pool

NORTH TEXAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
ARCHER COUNTY:													
Daily average	11,530	11,098	10,838	10,802	10,307	10,360	10,436	10,514	10,139	10,012	10,229	10,310	
Month	357,421	310,734	335,982	324,064	319,525	310,800	323,525	325,923	304,172	310,360	306,869	319,596	3,848,971
BAYLOR COUNTY:													
Daily average	1,508	1,484	1,404	1,397	1,270	1,384	1,247	1,228	1,168	1,145	1,134	1,216	
Month	46,760	41,552	43,512	41,905	39,381	41,526	38,665	38,054	35,024	35,502	34,030	37,684	473,595
CLAY COUNTY:													
Daily average	937	1,074	1,301	1,464	1,426	1,387	1,609	1,762	1,609	1,638	1,636	1,715	
Month	29,040	30,076	40,325	43,925	44,192	41,621	49,865	54,610	48,277	50,781	49,073	53,165	534,950
COOK COUNTY:													
Daily average	5,738	5,331	5,429	4,930	4,370	4,885	4,894	4,727	4,299	4,513	4,409	4,982	
Month	177,885	149,273	168,310	147,915	135,464	146,544	151,700	146,524	128,974	133,722	132,257	154,433	1,773,001
FOARD COUNTY:													
Daily average	686	615	650	703	628	689	535	556	511	408	475	493	
Month	21,267	17,227	20,165	21,086	19,473	20,670	16,593	17,251	15,319	12,650	14,240	15,290	211,231
JACK COUNTY (North):													
Daily average	140	172	180	181	189	174	178	178	167	162	180	179	
Month	4,325	4,827	5,582	5,427	5,865	5,228	5,528	5,530	5,021	5,009	5,393	5,547	63,282
MONTAGUE COUNTY:													
Daily average	5,677	5,451	5,598	5,180	4,736	5,114	5,522	5,527	4,877	4,621	4,812	4,715	
Month	175,975	152,626	173,527	155,412	146,806	153,416	171,178	171,327	146,298	143,252	144,348	146,162	1,880,327
WICHITA COUNTY:													
Burkburnett district—													
Daily average	5,150	4,718	4,929	5,380	4,919	4,906	5,113	5,106	5,280	5,327	5,316	5,090	
Month	159,656	137,704	152,792	161,396	152,494	147,182	158,509	158,286	158,411	165,140	159,486	157,782	1,868,838
K.M.A.-Iowa Park—													
Daily average	6,810	8,527	10,940	14,721	15,949	13,406	16,004	14,476	14,133	14,209	15,127	18,116	
Month	211,119	264,337	339,132	441,632	494,411	402,180	496,115	448,732	423,694	440,491	453,809	561,583	4,977,235
Electra—													
Daily average	8,512	7,919	8,310	8,117	7,816	8,009	8,107	9,007	8,114	8,319	8,314	8,210	
Month	263,876	221,732	257,610	243,515	242,288	240,281	251,321	279,217	243,413	257,894	249,420	254,510	3,005,077
Miscellaneous—													
Daily average	565	559	870	1,196	624	700	1,190	2,111	1,992	2,210	2,200	2,292	
Month	17,518	15,652	26,966	35,886	19,344	20,986	36,893	65,441	59,760	68,503	66,012	71,059	504,020
WILBARGER COUNTY:													
Daily average	9,328	9,002	9,164	9,409	8,901	7,753	8,952	9,073	8,640	8,591	8,483	8,506	
Month	289,180	252,053	284,079	282,276	275,916	232,582	277,514	281,265	259,210	266,310	254,500	263,679	3,218,564
YOUNG COUNTY (North):													
Daily average	6,175	6,015	6,077	6,001	5,697	6,611	5,778	5,774	5,567	5,507	5,754	5,710	
Month	191,439	168,415	188,395	180,039	176,605	198,333	179,111	178,989	167,000	170,727	172,608	177,010	2,148,671
Daily average	62,760	63,053	65,693	70,483	66,831	65,375	69,565	70,037	66,486	66,463	68,068	72,532	67,145
Total 1938	1,945,461	1,766,208	2,036,377	2,084,460	2,071,764	1,961,367	2,156,517	2,171,149	1,994,573	2,060,341	2,042,045	2,217,500	24,407,762
Total 1937	1,778,992	1,846,548	2,103,245	2,051,278	2,158,059	2,085,354	2,098,609	2,128,609	2,061,397	2,097,033	1,993,370	2,064,992	24,668,486
Total 1936	1,922,589	1,731,764	1,910,158	1,913,520	2,970,360	1,897,470	1,985,674	1,986,790	1,948,500	2,027,524	1,976,820	2,086,114	23,357,283
Total 1935	1,879,747	1,740,760	1,874,384	1,825,350	1,919,210	1,852,710	1,925,813	1,828,349	1,932,990	1,880,305	1,885,890	1,935,640	22,481,148
Total 1934	1,740,898	1,644,440	1,867,223	1,837,590	1,887,187	1,815,210	2,922,217	1,986,945	1,863,540	1,897,479	1,719,510	1,871,129	22,053,308

tory in the field with a total oil reserve of approximately 1,500,000 bbls. in the Palo Pinto lime.

The Steffens pool of Jones County, discovered in June from the Bluff Creek sand at 1,853-74 feet by the Snoddy & Dodson No. 1 Steffens, is probably the next in importance. The area had, after seven months of exploitation, 10 producing wells from the original producing horizon and two producers from the Cook sand, about 40 feet below the discovery Bluff Creek sand. There were approximately 340 acres proven for production and the total reserve was estimated, as of January 1, 1939, at over 1,500,000 bbls.

Most of the fields opened throughout West Central Texas in the past year were from the various sands and limes of the Canyon and upper Strawn series. These producing horizons have, in the past, proven prolific although none too extensive in area. However, they are expected to develop into typical West Central Texas lenticular sand and soft spot lime fields. During the latter half of the year several areas were discovered in Young County, all in the general vicinity of the town of Graham. These fields, small in area yet fairly large in production, are producing from the Caddo lime of the Bend series of basal Pennsylvanian age. The recovery figure per acre for the Caddo lime is estimated at approximately 5,000 bbls.; thus from the five new Caddo lime fields it is estimated there is a total proven territory of 440 acres giving Young County a total of over 2,000,000 bbls. of new reserve oil discovered in 1938.

Already proving a very prolific Palo Pinto lime pool, the Avoca townsite area was discovered in November of the past year by Ungren & Frazier at their No. 1 Griffin. The discovery well gauged 43 bbls. of oil in 14 hours; however, the other two wells already completed in the field indicate that the area may rival the Avoca pool of northeastern Jones County in producing ability.

Wildcat activity in this area remained about as usual as the new year opened, for there were some 65 or 70 wildcat tests drilling in the 17 West Central Texas counties. Stimulated by the productive results of last year's wildcat exploration to the four different series of formations in the Pennsylvanian rocks, there is little expectation that deep Ordovician exploratory tests will enter into the coming year's wildcat campaign.

NORTH TEXAS

The extensive development of the K.M.A. pool of Wichita County and the discovery of the Hull-Silk pool of northern Archer County, which included three producing horizons, highlighted an extremely busy 12 months of drilling activity in the North Texas district.

During the first six months of 1938 the K.M.A. field undisputedly held the spotlight of activity; however, the second half of the year interest shifted south into Archer County where wildcat exploration, stimulated by the far-reaching extensions made to K.M.A., led to the opening of three separate producing horizons for the Hull-Silk pool.

K.M.A. started off the year with only 89 producing wells, three rigs up and 59 drilling wells. There were approximately 50,000 proven acres at the time, with the field undefined on all sides. On July 1 there were 547 producing wells, and the field was rather well defined on all sides, with approximately 60,000 acres proven. On the first of January, 1939, there were a total of 878 wells completed in the field and its definition included some 70,000 proven or semiproven acres. During the year the field not only expanded in territory, but also in capital and investment. With primary exploration and development being done by small companies and independents, several major oil companies later bought into the field. There are now three natural gasoline plants in the area and one new refinery which furnishes a 1,500-bbl. daily outlet for the field's crude.

(Continued on Page 110)

DISCOVERIES IN WEST CENTRAL TEXAS IN 1938

County—	Location	Discovery well	Date	Depth	Formation	Prod. gauge	No. wells	Name of pool	Remarks
Shackelford	Extreme NW cor. of county.	Owens-Snebold No. 1 H. B. Haterius	January	3,211-18	Palo Pinto lime	878 bbls. in 15 hrs.	16 (In the deep horizon)	Ivy	Deep horizon for pool. Pool discovered from 1,900-ft. level in 1937
Jones	D. Bostillos Survey No. 189	W. K. and R. D. Jones No. 1 O. Neas	March	1,953-63		322 bbls. in 16 hrs.	1	Centerline pool	
Callahan	SW cor. of county	Hal Hughes et al No. 1 Poindexter	April	4,368-89	Ellenburger	896 bbls. in 9 hrs.	4	Oplin	2 oil wells; 2 gas wells
Haskell	Extreme S part of county	Forest Dev. Co. and J. W. McMillen No. 1 A. E. Pardue	May	2,795-2,815	Adams Branch lime	140 bbls. per day	3	Pardue	
Jones	NW part of county	Mack Hays and Montour Prod. Co. No. 1 Chittenden	May	3,004-22	Bunger (?) (Base of Cisco)	144 bbls. in 3 hrs.	2	Chittenden pool	
Stephens	10 mi. NW of Breckenridge	Horwitz, Oldham & Perkins No. 1 Williams	May	3,563-93	Caddo lime	300 bbls. per day	2		
Runnels	In McMillan pool	Homer Price et al No. 1 J. C. Beddo	June	3,515-30			1		Deeper horizon for old McMillan pool
Young	3 mi. SW of Graham, Bussels Sur.	Dean Bros. No. 1 King	October	T.D. 3,720	Caddo lime	120 bbls. per day	5	Dean pool	
Jones	Between Sandy Ridge pool and Lewis pool	W. L. Snoddy and C. C. Dodson No. 1 C. L. Steffens	June	1,853-74	Bluff Creek	140 bbls. per day	10	Steffens pool	
Stephens	4 mi. W of Moran	G. W. Rich No. 1 J. W. Andrews	June	3,667-69	Eastland Lake sand	288 bbls. per day	2		
Jones	8 mi. NE of Abilene. On county line	L. R. Terry No. 1 J. O. Bartlett, Sec. 59-14, T.&P. Sur.	June	1,590-92	Tannehill sand	80 bbls. per day	2	Hamby pool	
Fisher	6 mi. SW of Rotan field	Forest Dev. Co. No. 1 Bennett	June	3,685-95		16 bbls. per hour	1		Surrounded by three dry holes
Young	5 mi. SE of Graham, N. Reynolds Sur.	Cosden Pet. No. 1-B D. R. Sewell	June	T.D. 3,950	Caddo lime	404 bbls. per day	3		
Young	2 mi. SW of Graham, R. Hamilton Sur.	Homestead O. & G. No. 1 J. F. Knight	June	3,762-75	Caddo lime	1,275 bbls. per day	3	Knight pool	
Jones	E side of Noodle Creek field	Humble O. & R. Co. No. 1 Horton	July	2,915-32	Swastika	700 bbls. per day	3		Deeper horizon for Noodle Creek pool
Young	5 mi. E of Graham	Union Prod. No. 1 Ramsey-Corley	July	3,834-71	Caddo lime	40 bbls. per day	1		
Eastland	1¼ mi. W of Eastland	Dorothy Oil Co. No. 1 J. L. Johnson	July	1,482-88	Strawn	2,000,000 C.F.G.	1		
Brown	W. K. Dalton Sur.	W. D. Cunningham No. 1 Horton	July	1,800-16		90 bbls. per day	1		
Jones	2 mi. NE of Hawley pool	Roberts Oil Co. No. 1 Roy Pritchard	July	2,065-83	Tannehill sand	81 bbls. per day	2	Pritchard	
Coleman	Sec. 29, T.&N.O. Sur.	Cooper Bros. No. 1 Stockard	August	3,627-55		250 bbls. per day	1		
Young	Northern part of county, D. Dawson Sur.	E. D. Willis No. 1 G. P. Stewart	August	835-50	Larrimore sand	105 bbls. per day	2		
Jones	New horizon for Noodle Creek field	Humble O. & R. Co. No. 1 Graves	September	2,378-90	Tannehill sand	40 bbls. per day	1		New deep horizon for old Noodle Creek field, 3rd horizon
Young	New horizon for Knight pool, 2 mi. SW Graham	Tex-Tor Oil No. 1 Mosley	October	T.D. 2,472		100 bbls. per day	1		New horizon for Knight pool
Young	4 mi. SW of Newcastle	Brazos Young Oil No. 1 Wray	October	3,950-4,257	Caddo lime	659 bbls. per day	2		
Shackelford	Sec. 153, E.T. Sur.	Butler & Horne No. 1 Nail Ranch	November	1,398-1,403	Cook sand	121 bbls. per day	5		
Throckmorton	SW part county, Blk. 95, C.I.R. Sur.	Danciger O. & R. No. 1 C. T. Brockman	November	P.B. 4,337		12 bbls. per day	1		Completed from a plugged-back depth
Scurry	Sec. 130, Blk. 97, H.&T.C. Sur.	Coffield & Guthrie No. 1 Spears	November	P.B. 2,375		89 bbls. per day	2		
Jones	Avoca townsite	Ungren & Frazier No. 1 Griffin Est.	November	3,247-50	Palo Pinto sand	43 bbls. in 14 hrs.	3	Avoca townsite pool	
Jones	In Steffens pool	Ungren & Frazier No. 1 Steffens	November	1,894-98	Cook sand	263 bbls. per day	2		New deep horizon for Steffens pool
Jones	S part of county	L. A. Hedrick No. D. Akard	December	2,141-54	Bluff Creek sand	134 bbls. per day	1		

CENTRAL TEXAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BROWN COUNTY:													
Daily average	1,601	1,605	1,691	1,634	1,590	1,556	1,588	1,612	1,581	1,581	1,581	1,590	
Month	49,635	44,943	52,422	49,027	49,291	46,689	49,239	49,963	47,442	49,013	47,443	49,296	584,403
CALLAHAN COUNTY:													
Daily average	1,290	1,289	1,328	1,284	1,250	1,262	1,220	1,224	1,193	1,186	1,172	1,193	
Month	39,994	36,100	41,176	38,529	38,761	37,872	37,826	37,932	35,802	36,760	35,152	36,972	452,876
COLEMAN COUNTY:													
Daily average	1,010	1,033	1,062	1,017	923	1,026	965	1,034	929	913	1,281	1,289	
Month	31,319	28,920	32,929	30,515	28,624	30,777	29,900	32,063	27,876	28,315	28,431	39,960	369,629
COMANCHE COUNTY:													
Daily average	50	56	63	65	64	62	63	72	66	85	93	92	
Month	1,561	1,577	1,944	1,958	1,995	1,860	1,963	2,226	1,978	2,641	2,797	2,852	25,352
EASTLAND COUNTY:													
Daily average	2,741	2,708	2,751	2,711	2,730	2,753	2,740	2,761	2,810	2,863	2,804	2,890	
Month	84,959	75,814	85,274	81,330	84,645	82,586	84,955	85,604	84,308	88,762	84,122	89,591	1,011,950
ERATH COUNTY:													
Daily average	93	93	89	79	70	80	76	79	82	78	78	79	
Month	2,575	2,591	2,748	2,366	2,169	2,396	2,345	2,445	2,471	2,417	2,354	2,456	29,333
FISHER COUNTY:													
Daily average	3,311	3,158	3,358	3,444	3,119	3,309	3,515	3,598	3,295	3,364	3,324	3,515	
Month	102,645	88,437	104,090	103,319	96,695	99,271	108,950	111,551	98,836	104,280	99,730	108,960	1,226,764
HASKELL COUNTY:													
Daily average	12	22	21	19	86	79	141	180	159	121	129	128	
Month	385	605	649	566	2,677	2,367	4,383	5,570	4,768	3,740	3,868	3,976	33,554
JACK COUNTY (South)—													
Daily average	7,901	7,613	7,308	7,097	6,497	6,517	7,094	6,993	6,610	6,482	6,430	6,460	
Month	244,931	213,248	226,561	212,903	201,392	195,514	219,922	216,776	198,313	200,950	192,909	200,274	2,523,693
JONES COUNTY:													
Daily average	5,295	5,152	5,482	5,394	4,972	5,183	6,067	6,324	5,914	6,047	6,145	6,444	
Month	164,141	144,250	169,949	161,816	154,136	155,486	188,069	196,042	177,405	187,451	184,354	199,772	2,082,871
PALO PINTO COUNTY:													
Daily average	282	296	303	265	304	261	325	345	337	343	340	341	
Month	8,731	8,289	9,400	7,953	9,429	7,829	10,079	10,696	10,097	10,628	10,204	10,574	113,909
SHACKELFORD COUNTY:													
Daily average	6,154	5,945	5,948	5,857	5,903	5,676	5,829	5,999	5,817	5,860	5,895	5,955	
Month	190,762	166,464	184,400	175,726	83,000	170,270	180,693	185,967	174,505	181,647	176,881	184,611	2,154,926
STEPHENS COUNTY:													
Daily average	3,933	3,807	3,749	3,764	3,707	3,627	3,708	3,737	3,617	3,680	3,570	3,705	
Month	121,910	106,589	116,234	112,913	114,925	108,812	114,936	115,853	108,506	114,095	107,108	114,862	1,356,743
TAYLOR COUNTY:													
Daily average	66	67	66	61	65	59	61	60	60	130	119	120	
Month	2,046	1,876	2,042	1,842	2,017	1,767	1,900	1,872	1,796	4,018	3,563	3,709	28,448
THROCKMORTON COUNTY:													
Daily average	347	332	339	324	304	331	307	302	295	290	286	282	
Month	10,765	9,302	10,514	9,718	9,422	9,938	9,517	9,356	8,842	8,978	8,581	8,729	113,662
YOUNG COUNTY (South)—													
Daily average	4,975	4,928	5,116	5,087	4,898	4,480	5,229	5,126	4,918	4,716	4,893	4,215	
Month	154,219	137,995	158,600	152,614	151,834	134,400	162,093	158,921	147,536	146,182	146,804	130,665	1,781,863
STONEWALL COUNTY:													
Daily average	.....	.....	.....	.....	.....	.....	.....	61	112	73	61	66	
Month	.....	.....	.....	.....	.....	.....	.....	1,897	3,360	2,257	1,828	2,052	11,394
Daily average	39,051	38,107	38,675	38,103	36,484	36,261	38,930	39,540	37,795	37,811	37,871	38,365	38,086
Total 1938	1,210,578	1,067,000	1,198,932	1,143,095	1,131,012	1,087,834	1,206,770	1,224,734	1,133,841	1,172,134	1,136,129	1,189,311	13,901,370
Total 1937	1,030,593	992,761	1,139,200	1,116,447	1,183,185	1,172,721	1,178,315	1,194,484	1,177,382	1,220,022	1,131,783	1,187,120	13,724,013
Total 1936	888,801	805,562	873,270	880,650	938,339	918,780	1,011,902	980,127	1,001,520	1,004,369	985,260	1,008,771	11,297,351
Total 1935	904,766	778,204	905,758	862,290	908,889	875,220	895,466	897,760	877,560	900,798	878,040	887,220	10,571,971
Total 1934	835,326	819,308	919,243	856,440	913,260	900,300	937,502	938,339	905,100	940,013	889,500	904,053	10,758,384

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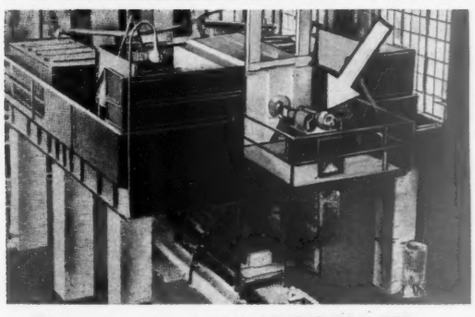

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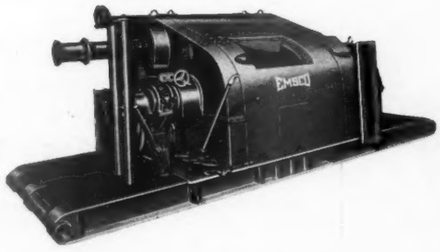

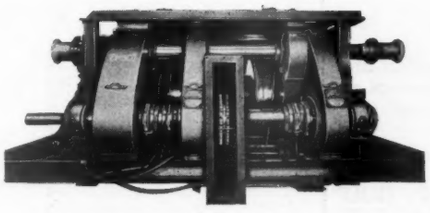

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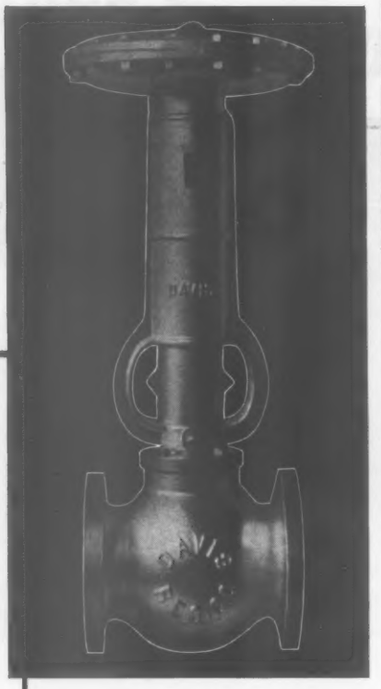

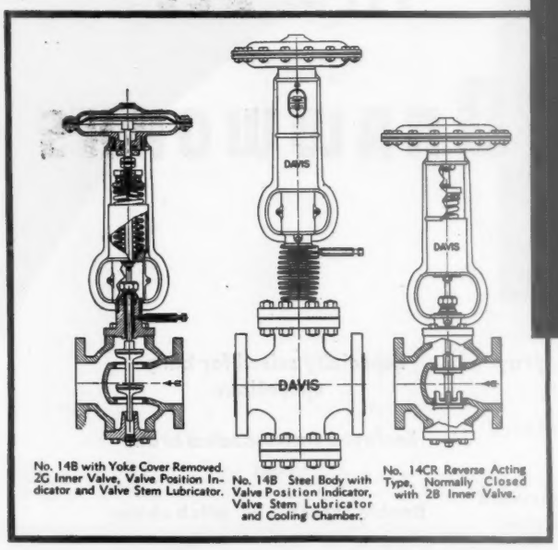

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(Continued from Page 107)

Influenced by the flush Strawn production in the K.M.A. field deep wildcatting spread throughout almost all of North Texas. About the middle of March, Archer County was given a new pool when Hull & Silk (now Blackwell Oil & Gas and Helmerich & Payne) completed their No. 1 Waggoner for 127 bbls. of oil per hour or at the rate of more than 3,000 bbls. per day. Immediate offsetting and extension work followed, until as the year closed the area had three distinct deep producing horizons with a total of 12 producers. Of the three levels, the 3,800-foot, 4,300-foot and the 4,700-foot, most of the development for the coming year is predicted for the 4,300-foot level. The producing formation here is the Bend and wells average about 800 to 900 bbls. on initial tests. The original 3,800-foot level of the pool has an estimated proven acreage of 640 acres giving it an estimated total recovery of almost 5,000,000 bbls. of oil, according to the present, yet undefined, limits of the area. The 4,300-foot horizon has a proven acreage of about 1,000 acres with an estimated 4,500,000 bbls. of recoverable oil in place.

Canyon Sand Pool

A major discovery of the second half of 1938 was the Holliday pool of southern Wichita and northern Archer counties. The field is producing from the Canyon sand at a depth of 2,600 feet and wells averaged about 300 bbls. on initial 24-hour tests. There have been, up to the end of the year, 12 producers completed in the field with no dry holes. The area covers about 1,500 acres and is one of the major discoveries in the area for the year. King Oil Co. and Madden & Goldsmith discovered the pool and it is located about 1½ miles north of the town of Holliday in Archer County.

Scattered Areas

Several other areas were opened to production over the past year; however, only one of these has given any indications of becoming an oil field of any size. This is the Cooke County deep discovery by Sinclair Prairie Oil Co. in June. The area had two producers as the new year started and had a semiproven territory of about 80 acres. The pool is producing from the lower Bend formations and is located in the extreme northern part of the county.

The entire North Texas area was still under the stimulation of the deep discoveries in Archer and Wichita counties as the year closed and consequently no decline in wildcat exploration is predicted for 1939.

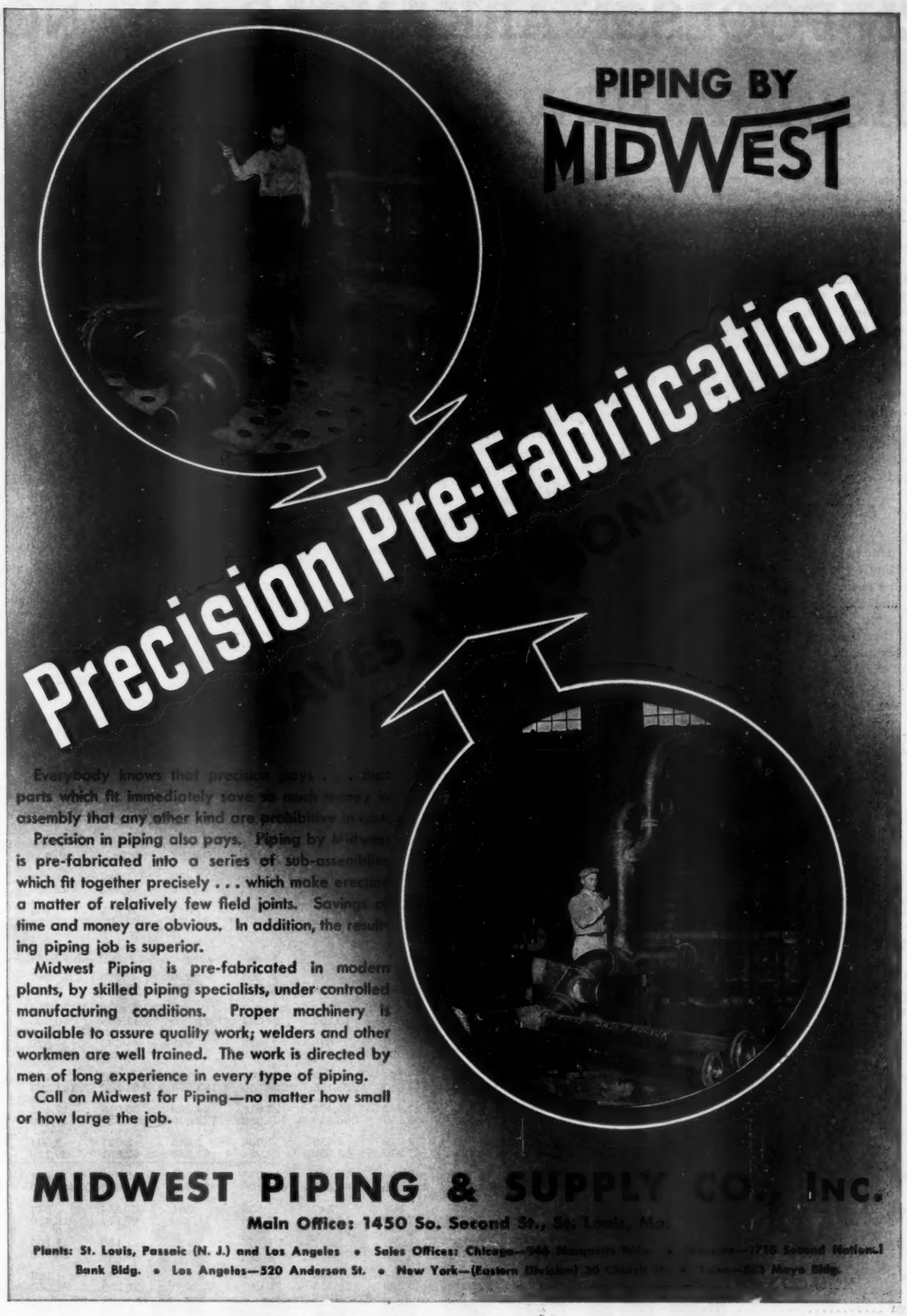
WEST CENTRAL AND NORTH TEXAS

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Archer	215	37,656	90	0
Baylor	10	0	10	0
Brown	85	1,620	39	2
Callahan	73	1,177	57	3
Clay	174	14,339	60	0
Coleman	28	94	21	5
Comanche	20	140	10	0
Cooke	151	9,122	43	2
Denton	9	0	9	0
Eastland	29	2,015	11	3
Erath	1	0	1	0
Fisher	50	10,535	22	0
Foard	9	365	6	2
Hardeman	1	0	1	0
Haskell	12	603	7	0
Hood	1	0	1	0
Jack	263	31,181	100	8
Jones	198	53,136	74	0
Knox	3	0	3	0
Mills	1	0	1	0
Montague	81	7,049	25	1
Palo Pinto	27	54	19	5
Parker	5	0	5	0
Shackelford	195	12,181	102	5
Stephens	16	231	5	5
Tarrant	1	0	1	0
Taylor	17	404	13	0
Throckmorton	18	18	17	0
Wichita	1,033	632,547	177	0
Wilbarger	71	12,727	28	0
Wise	1	0	1	0
Young	332	48,127	155	2
Total 1938	3,130	875,321	1,114	43

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	229	71,824	93	4
February	201	45,651	78	2
March	298	94,490	104	6
April	277	95,718	93	1
May	342	105,590	106	2
June	326	107,385	109	7
July	263	68,746	89	5
August	364	103,978	116	5
September	234	57,054	76	6
October	200	48,648	79	2
November	221	46,081	85	3
December	175	30,156	86	0
Total 1938	3,130	875,321	1,114	43
Total 1937	2,492	257,395	1,088	46
Difference	638	617,926	26	3



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Annual Review

OPEN POOLS IN ARKANSAS AND NORTH LOUISIANA; NEW HORIZONS

By GEORGE WEBER

Field discoveries, opening of new producing horizons in existing fields, and extension of proven acreage marked developments in the Tex-La-Ark area during 1938. South Arkansas activity played an important part, with discoveries in the Smackover lime in Columbia County. In North Louisiana, the discovery of the Shreveport or Cross Lake field, with its subsequent development, represented the most important new finding in the Pettit lime. Deeper drilling in the state opened new horizons to the prolific Cotton Valley and other pools where shallow production was augmented by deeper exploration.

The volume of drilling declined due mainly to a let-up in achievement in a number of fields in the district. The Lisbon, Schuler and Rodessa fields, which had previously accounted for a large portion of drilling activity, witnessed decreased drilling programs, as their producing limits were determined, and inside locations became developed.

ARKANSAS

Drilling in the Schuler field of Union County, and initial development of new fields discovered in Columbia County gave South Arkansas the most active year since the Smackover boom. The Schuler field, in which the Jones sand and the Reynolds lime were widely developed, was tentatively defined on the north and the southeast, so that the structure, which a year ago was unknown in extent, is at present approaching the end of its drilling campaign.

The limits of the field were further indicated by a steepened reservoir pressure decline curve during the second half of the year, and curtailment of production is being practiced to approximate the critical rate for the field. In addition, pressure maintenance is being planned for the field, which will necessitate the drilling of several input wells during the coming year.

Columbia County

Discoveries in South Arkansas were confined chiefly to Columbia County, where deeper drilling met success in several new fields in the Smackover lime.

The first discovery of the year in that section was indicated in January, but several weeks elapsed, due to mechanical difficulties, before the field discovery was completed as a producer.

The Kerr-Lynn Oil Co. completed No. 1 Barnett, Section 14-17-20, in early March. The well made an initial production of 284 bbls. in 20 hours through a quarter-inch choke with tubing pressure of 315 pounds. The 37.8-gravity crude is similar in character to Jones sand production in Schuler, but slightly less valuable as refining and cracking stock. After the discovery well was completed, it, together with considerable acreage in the new Magnolia field, was purchased by the Atlantic Refining Co. The top of the Smackover lime at 7,646-49 feet is the productive level of the discovery well.

In the second half of the year, the field saw its first development, but three failures in quick succession killed much of the interest in the area. The dry holes, located to the east and west of the discovery well, ran low and tested salt water in the producing formation. This apparently limited the field to a small area, and it was not until late October that a test drilled to the south of the discovery, Grady Vaughn No. 2 Garrett, showed a considerable thickening of the saturated lime, and a very steep dip. The Vaughn well, a south offset to the operator's No. 1, which came in as a producer shortly after the Atlantic and Petroleum Finance failures, was a large producer, with over 100 feet of porosity. This thickening is due to a very steep dip in the Smackover lime, which showed the No. 2 Garrett to be running 132 feet higher in the offset well to the north, and 261 feet higher than the discovery well, about one-half mile to the north. Following the completion of the second Vaughn well, interest revived in the area and at the close of the year several rigs were active and new locations were being staked for the development program which will reveal much regarding the extent and character of the structure.

Village

A second structure, located about 5 miles east of the Magnolia pool, was discovered by the Standard Oil Co. of Louisiana in May, as the No. 1 W. P. Phillips came in flowing 74 bbls. the first hour and 92 bbls. the second hour through a three-eighths inch choke. Development at Village was relatively slow for the remainder of the year, with four producers at the year's end. Two of the wells now producing were completed for good initial gauges of high gravity crude. The Fohs Oil Co. No. 1 Phillips made 152 bbls. of 49.5-gravity oil together with 2,000,000 feet of gas, and the Standard Oil Co. No. 1 Crumpler made 190 bbls. of 61.7-gravity oil with 4,000,000 feet of gas, both producing from the Smackover lime.

Atlanta Field

The third producing pool in Columbia County was brought in in December. The Tide Water-Seaboard Oil Co. No. 1 J. T. Beene, about 8 miles southeast of the Magnolia field, was completed in the Smackover

ARKANSAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BUCKNER:													
Daily average	407	368	202	463	637	931	1,085	1,316	1,459	1,482	1,419	1,294	
Month	12,617	10,304	6,262	13,890	19,747	27,930	33,635	40,796	43,770	45,942	42,570	40,114	337,577
CHAMPAGNOLLE:													
Daily average	1,229	1,182	1,189	1,206	1,204	1,164	1,076	1,068	1,047	1,375	1,454	1,716	
Month	38,099	33,096	36,859	36,180	37,324	34,920	33,356	33,108	31,410	42,625	43,620	53,196	453,793
EL DORADO:													
Daily average	1,849	1,847	1,855	1,866	1,872	1,829	1,848	1,844	1,841	1,829	1,816	1,760	
Month	57,319	51,716	57,505	55,980	58,032	54,870	57,288	57,164	55,230	56,699	54,480	54,560	670,843
LISBON:													
Daily average	278	272	269	266	270	271	270	269	270	268	267	265	
Month	8,618	7,616	8,339	7,980	8,370	8,130	8,370	8,339	8,100	8,308	8,010	8,215	98,395
MILLER COUNTY:													
Daily average	367	298	400	384	386	396	392	374	386	375	362	351	
Month	11,377	8,344	12,400	11,520	11,966	11,880	12,152	11,594	11,580	11,625	10,860	10,881	136,179
NEVADA:													
Daily average	685	672	673	649	635	634	648	636	622	633	626	619	
Month	21,235	18,816	20,863	19,470	19,685	19,020	20,088	19,716	18,660	19,623	18,780	19,189	235,145
RODESSA:													
Daily average	8,526	7,932	8,003	7,680	6,929	7,128	7,135	6,560	6,119	4,882	4,711	4,584	
Month	264,306	222,096	248,093	230,400	214,799	213,840	221,185	203,360	183,570	151,342	141,330	142,104	2,436,425
SCHULER:													
Daily average	7,930	13,521	17,490	20,264	8,855	11,842	21,479	22,616	24,269	20,018	17,442	17,748	
Month	245,830	378,588	542,190	607,290	274,505	355,260	665,849	701,096	728,070	620,558	523,260	550,188	6,193,314
SMACKOVER, light:													
Daily average	1,971	1,986	2,006	2,042	2,068	2,079	2,050	2,064	2,046	2,021	2,004	1,982	
Month	61,101	55,608	62,186	61,260	64,108	62,370	63,550	63,984	61,380	62,651	60,120	61,442	739,760
SMACKOVER, heavy:													
Daily average	15,454	15,826	15,847	15,879	16,326	16,356	16,081	16,055	16,008	15,889	15,661	15,429	
Month	479,074	443,128	491,257	476,370	506,106	490,680	498,511	497,705	480,240	492,559	469,830	478,299	5,803,759
STEPHENS:													
Daily average	545	558	562	541	567	567	547	555	561	554	547	540	
Month	16,895	15,624	17,422	16,230	17,577	17,010	16,957	17,205	16,830	17,174	16,410	16,740	202,074
TROY:													
Daily average	1,272	1,311	1,285	1,260	1,238	1,217	1,203	1,207	1,195	1,160	1,105	934	
Month	39,432	36,708	39,835	37,800	38,378	36,510	37,293	37,417	35,850	35,960	33,150	28,954	437,287
URBANA:													
Daily average	1,212	1,202	1,194	1,238	1,223	1,364	1,165	1,182	1,173	1,169	1,166	1,123	
Month	37,572	33,656	37,014	37,140	37,913	40,920	36,115	36,642	35,190	36,239	34,980	34,813	438,194
MAGNOLIA:													
Daily average	.....	.....	.....	295	290	242	59	351	142	283	715	1,126	
Month	.....	.....	.....	8,850	8,990	7,260	1,829	10,881	4,260	8,773	21,450	34,906	107,199
VILLAGE:													
Daily average	.....	.....	.....	.....	38	189	201	274	303	377	355	461	
Month	.....	.....	.....	.....	1,178	5,670	6,231	8,494	9,090	11,687	10,650	14,291	67,291
Daily average	41,725	46,975	50,975	54,033	42,538	46,209	52,239	56,371	57,441	52,315	49,650	49,932	50,294
Total 1938	1,293,475	1,315,300	1,580,225	1,620,990	1,318,678	1,386,270	1,712,409	1,747,501	1,723,230	1,621,765	1,489,500	1,547,892	18,357,235
Total 1937	803,117	758,660	843,851	824,220	850,175	850,230	887,499	1,068,322	1,125,360	1,389,172	1,365,420	1,415,057	12,181,083
Total 1936	935,115	858,313	925,815	895,830	928,419	894,930	911,927	898,442	842,940	875,998	849,960	879,656	10,697,345
Total 1935	974,175	861,588	950,336	917,520	967,262	933,810	944,942	939,703	907,260	932,201	895,320	914,469	11,138,586
Total 1934	987,412	875,224	958,489	918,810	920,850	923,820	985,738	973,400	937,260	948,073	918,480	1,011,902	11,359,458

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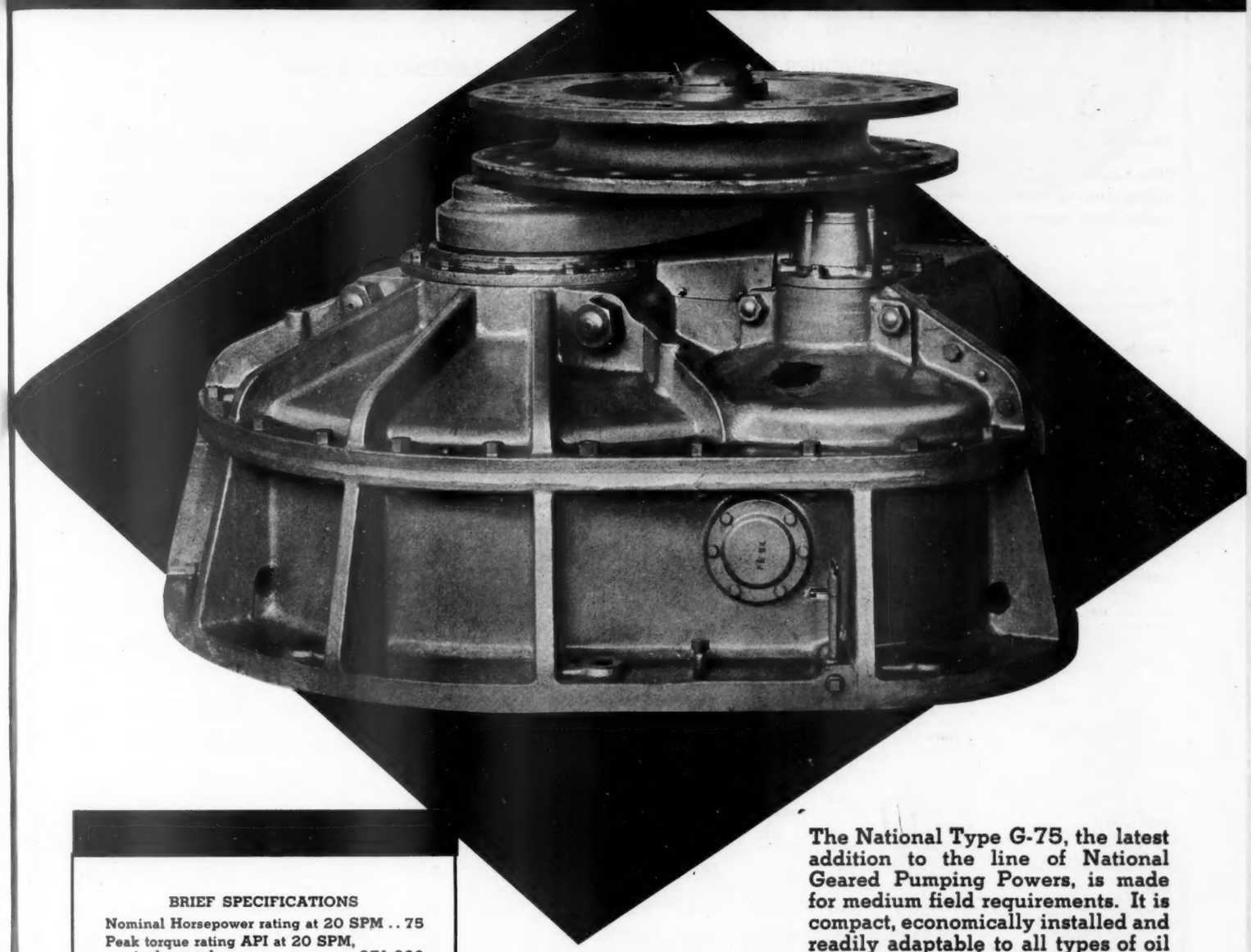
The Type G·75· for Medium Field Requirements



BRIEF SPECIFICATIONS

Nominal Horsepower rating at 20 SPM	75
Peak torque rating API at 20 SPM, inch pounds	371,000
Stroke length regular, inches	30
Overall gear ratio	20.9
Number of holes for connections	20

The National Type G-75, the latest addition to the line of National Geared Pumping Powers, is made for medium field requirements. It is compact, economically installed and readily adaptable to all types of oil country prime movers. General design is the same as that of the Types G-30, G-50, and G-100 National Geared Powers.

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THE NATIONAL SUPPLY COMPANY

lime at 8,212-20 feet for an initial gauge of 8½ bbls. per hour of 44-gravity oil through an eighth-inch choke.

NORTH LOUISIANA

A Pettit lime field close to Shreveport comprised the only important new pool developed in North Louisiana during 1938. The discovery well of the Shreveport, or Cross Lake field, was completed in early July by R. E. Allison. His No. 1 Ellerbe and others encountered porosity and saturation in the Pettit lime, a member of the lower Glen Rose formation, and after setting pipe and perforating at 5,549-70 feet, was brought in making an initial gauge of 499 bbls. daily through a quarter-inch choke.

Exploratory tests were begun in the immediate vicinity of the discovery well, and in relatively distant outpost tests to the southeast and southwest. The outposts proved dry, but the field has been extended in several directions, 1¼ miles to the northeast, nearly 2 miles to the south, and 1⅝ miles to the southeast, the latter extension bringing the field into the limits of the city. A one-half mile north outpost to discovery failed, and poor showings in a south outpost indicate the two limits of the field.

Much of the proven acreage apparently lies under Cross Lake, and a considerable share is owned in small lots. Drilling has been steadily increasing in the area, and at the end of the year, six rigs were active, and new locations were being staked in increasing numbers. At the end of December seven oil wells had been completed, and other tests were due for early completion.

Cotton Valley

The most important discovery of the year in the Cotton Valley field, Webster Parish, was the finding of oil in the deep Bodcaw sand, indicating the presence of an oil-producing section in the lower Marine, surrounding the extensive gas-distillate cap. The discovery well, Stanolind Oil & Gas Co. No. 1 Pardee Co., located 1¾ miles southeast of production in the gas-distillate zone, was brought in for a 944-bbl. well in June. The crude had a gravity of 39.6 degrees A.P.I.

The second oil well at Cotton Valley was completed

DISCOVERIES IN NORTH LOUISIANA AND ARKANSAS IN 1938

North Louisiana

Field—	County	Owner	Farm	Location	Comp. date	Prod. formation	Pay depth	Init. prod.	Ttl. wells Dec. 31
Shreveport	Caddo	R. E. Allison	Ellerbe	1,992 ft. S, 664 ft. E NW cor. Sec. 27-18-14	July 16	Pettit	5,549-70	499 bbls. per day	7
Blue Lake	Sabine	Sutton-Zwolle Oil Co.	Sabine Lbr. Co.	SE cor. NW NE Sec. 23-7n-14w	April 15	Paluxy	4,208	984 bbls. per day	1
Cotton Valley "D" sand	Webster	Midstates Oil Corp.	Welori Lbr. Co.	C NW NW Sec. 3-20-10	July 19	L. Marine	8,502-8,528½	325 bbls. per day	3
Cotton Valley Bodcaw oil	Webster	Stanolind O. & G. Co.	Pardee	C SW NE Sec. 36-21-10	June 6	L. Marine	8,572-8,605	944 bbls. per day	3

Arkansas

Magnolia	Columbia	Kerr-Lynn Oil Co.	Barnett	SE cor. SW NE Sec. 14-17-20	April 4	Smackover lime	7,646-49	302 bbls. per day	7
Village	Columbia	Standard Oil Co. of Louisiana	Phillips	660 ft. N and W C Sec. 15-17-19	May 24	Smackover lime	7,603	1,766 bbls. per day	4
Atlanta	Columbia	Tide Water-Seaboard Oil Co.	J. T. Beene	C SE NW Sec. 15-18-19	December 16	Smackover lime	8,201-26	204 bbls. per day	1

NORTH LOUISIANA

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BELLEVUE:													
Daily average	696	682	715	694	652	641	625	585	610	670	640	680	
Month	21,576	19,096	22,165	20,820	20,212	19,230	19,375	18,135	18,300	20,770	19,200	21,080	239,959
CADDO, Light:													
Daily average	3,915	3,842	3,850	3,839	3,924	4,072	4,198	4,137	4,004	4,062	4,088	4,110	
Month	121,365	107,576	119,350	115,170	121,644	122,160	130,125	128,250	120,115	125,920	122,640	127,410	1,461,730
CADDO, Heavy:													
Daily average	2,521	2,458	2,477	2,385	2,374	2,422	2,482	2,393	2,431	2,553	2,577	2,640	
Month	78,151	68,824	76,787	71,550	73,594	72,660	76,955	74,180	72,935	79,145	77,310	81,840	903,926
CONVERSE:													
Daily average	625	637	573	384	566	659	570	555	485	485	560	542	
Month	19,375	17,836	17,763	11,520	17,546	19,770	17,670	17,205	14,550	15,035	16,800	16,802	201,872
COTTON VALLEY:													
Heavy—													
Daily average	209	206	111	95	102	81	90	90	85	90	90	95	
Month	6,479	5,768	3,441	2,850	3,162	2,430	2,790	2,790	2,550	2,790	2,700	2,945	40,695
Light—													
Daily average	1,831	1,450	2,556	4,123	4,515	5,976	5,565	6,143	6,276	5,630	4,915	3,800	
Month	56,761	40,600	79,236	123,690	139,965	179,270	172,515	190,433	188,280	174,530	147,450	117,800	1,610,530
Distillate—													
Daily average	3,015	3,760	4,068	3,962	4,239	4,661	4,020	3,740	3,495	4,185	4,595	4,576	
Month	93,465	105,280	126,108	118,860	131,409	139,830	124,620	115,940	104,850	129,735	137,850	141,856	1,469,803
Lower Marine Oil—													
Daily average	.....	.....	.....	.....	.....	11	725	1,272	1,779	1,555	1,320	1,303	
Month	.....	.....	.....	.....	.....	340	22,475	39,432	53,370	48,205	39,600	40,393	243,815
CROSS LAKE:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	820	915	775	1,197	
Month	.....	.....	.....	.....	.....	.....	.....	.....	24,600	28,365	23,250	37,107	113,322
DE SOTO AND RED RIVER:													
Daily average	1,446	1,358	1,377	1,452	1,443	1,398	1,400	1,375	1,345	1,320	1,275	1,229	
Month	44,826	38,024	42,687	43,560	44,733	41,940	43,400	42,625	40,350	40,920	38,250	38,099	499,414
ELM GROVE:													
Daily average	359	330	332	339	353	344	360	335	360	330	330	297	
Month	11,129	9,240	10,292	10,170	10,943	10,320	11,160	10,385	10,800	10,230	9,900	9,207	123,776
HAYNESVILLE:													
Daily average	3,140	3,027	2,953	2,938	2,918	2,897	3,125	3,280	3,185	2,930	2,930	2,838	
Month	97,340	84,756	91,543	88,140	90,458	86,910	96,875	101,680	95,550	90,830	87,900	87,978	1,099,960
HOLLY:													
Daily average	96	92	80	91	82	71	75	80	105	90	85	90	
Month	2,976	2,576	2,480	2,730	2,542	2,130	2,325	2,480	3,150	2,790	2,550	2,790	31,519
HOMER:													
Daily average	2,499	2,511	2,556	2,618	2,642	2,645	2,625	2,600	2,665	2,615	2,620	2,653	
Month	77,469	70,308	79,236	78,540	81,902	79,350	81,375	80,600	79,950	81,065	78,600	82,243	950,638
LISBON:													
Daily average	10,912	10,233	10,396	9,812	11,592	9,698	10,365	9,800	7,120	5,975	6,550	7,184	
Month	338,272	286,524	322,276	294,360	359,352	290,940	321,315	303,800	213,600	185,225	196,500	222,704	3,334,868
PLEASANT HILL:													
Daily average	116	114	112	102	117	106	100	95	115	100	100	102	
Month	3,596	3,192	3,472	3,060	3,627	3,180	3,100	2,945	3,450	3,100	3,000	3,162	38,884
RODESSA:													
Daily average	43,780	43,256	41,674	41,768	38,892	38,012	36,260	35,360	34,485	34,645	29,775	28,485	
Month	1,357,180	1,211,168	1,291,894	1,253,040	1,205,652	1,140,360	1,124,060	1,096,160	1,034,550	1,073,995	893,250	914,035	13,595,344
SAREPTA-CARTERVILLE:													
Daily average	316	299	227	203	285	354	298	282	255	236	249	296	
Month	9,796	8,372	7,037	6,090	8,835	10,610	9,225	8,750	7,660	7,330	7,470	9,196	100,351
SHONGALOO, Distillate:													
Daily average	.....	.....	.....	.....	.....	107	242	240	210	169	136	100	
Month	.....	.....	.....	.....	.....	3,220	7,515	7,370	6,290	5,225	4,080	31,00	36,800
SLIGO:													
Daily average	352	306	222	207	444	569	1,445	1,545	1,485	1,815	1,180	1,256	
Month	10,912	8,568	6,882	6,210	13,764	17,070	44,795	47,895	44,550	56,265	35,400	28,936	331,247
SUGAR CREEK:													
Daily average	338	322	325	319	321	302	305	305	290	375	285	292	
Month	10,478	9,016	10,075	9,570	9,951	9,060	9,455	9,455	8,700	11,625	8,550	9,052	114,987
URANIA:													
Daily average	2,875	2,869	2,787	2,828	2,825	2,864	2,840	2,730	2,765	2,650	2,770	2,709	
Month	89,125	80,332	86,397	84,840	87,575	85,920	88,040	84,630	80,250	82,150	83,100	83,979	1,016,338
ZWOLLE:													
Daily average	766	784	874	1,002	1,509	1,479	2,355	2,750	3,210	3,960	3,825	3,084	
Month	23,746	21,952	27,094	30,060	46,779	44,370	73,005	85,250	96,300	122,760	114,750	95,604	781,670
Daily average	79,807	78,536	78,265	79,161	79,795	79,369	80,070	79,690	77,490	77,355	71,670	70,558	77,647
Total 1938	2,474,017	2,199,008	2,426,215	2,374,830	2,473,645	2,381,070	2,482,170	2,470,390	2,324,700	2,398,005	2,150,100	2,187,298	28,341,448
Total 1937	2,450,860	1,963,220	2,157,259	2,169,090	2,397,664	2,489,310	2,747,685	2,724,218	2,647,350	2,326,767	2,178,870	2,341,430	28,593,723
Total 1936	1,566,554	1,757,603	1,961,959	1,902,420	2,565,219	2,316,510	2,530,406	2,539,675	2,411,370	2,374,383	2,344,920	2,478,202	26,749,221
Total 1935	721,897	644,224	711,791	691,590	716,167	693,420	716,844	764,367	801,540	971,168	985,260	1,211,232	9,629,495
Total 1934	854,577	786,128	842,549	783,240	770,060	769,890	768,459	758,632	720,510	741,055	719,280	736,281	9,251,061

on the northwest edge of the field, as the North American Consolidated Oil Co. No. 1 Burrows came in making 27 bbls. per hour with a high gas-oil ratio. Then late in the year a third crude oil well in the Bodcaw, Hunt Oil Co. and Stanolind Oil & Gas Co. No. 1 Pardee-Coffee Unit. This third well is the best producer to date in the oil zone, gauging 1,752 bbls. daily through a half-inch choke.

The oil producing sand surrounding the gas cap at Cotton Valley is not expected to prove extensive, due to the failure of a southwest outpost, which showed salt water in the Bodcaw sand at a level close to the oil-bearing sand level.

In addition to the discovery of oil in the Bodcaw sand of the field, the first commercial production was found in the "D" sand, a member immediately above the Bodcaw in the lower Marine formation. The discovery well was the Midstates Oil Corp. No. 1 Welori Lumber Co., located on the south edge of the field, and at the time of its completion, a 1-mile south outpost. The well gauged 298 bbls. in 22 hours through an eighth-inch choke, making 43.9-gravity oil through perforations in the "D" sand at 8,502-32 feet. This discovery, completed in July, was followed by two other wells in the same sand before the end of the year.

Recent tests on the north, northeast and northwest edges of the structure indicated irregularities in the structure and the characteristics of the Bodcaw sand. The sand is tightening considerably on the north, and a flattening of the sstructure is evident on the northeast and southwest, with similar irregularities indicated on the northwest. These developments were requiring changes in the subsurface picture of the lower Marine at Cotton Valley at the close of the year, and the previously regarded regular anticlinal structure of the field will need revision, as further flank tests are drilled.

Shongaloo

Discovery of a deep gas-distillate sand in the old shallow Shongaloo gas field, was made by the Magnolia Petroleum Co. in June, when No. 1 Sexton Unit was completed at 8,990-9,010 feet, making 14 bbls. per hour of distillate, and 2,000,000 feet of gas daily. The same operators were drilling two additional tests in the field at the end of the year, and in addition, were testing a deep wildcat in the Carterville field.

An old discovery in the Paluxy formation in Sabine Parish attracted attention in May, but subsequent failures in the area left it inactive for the remainder of the year. The discovery well, Sutton-Zwolle Oil Co. No. 1 Sabine Lumber Co., is located in the old shallow Blue Lake field, now abandoned. It blew in making 41 bbls. per hour through a three-eighths inch choke on the drill stem, after coring at 4,208 feet. Litigation has been partially responsible for the lack of development of this prospect.

EAST TEXAS BORDER

The East Texas border counties saw little new development of importance outside the Jefferson-Lodi extension to the Rodessa field in Marion County. There, new gas production was opened in wells drilling southwest of Jefferson townsite and in the townsite itself. The oil producing section of the field received steady development throughout the year.

A 2½-mile southwest outpost to the Waskom gas field of Harrison County, the Arkansas-Louisiana Gas Co. No. 1 Abney was brought in at 4,834 feet for an 18,000,000-foot gasser.

The Joaquin-Logansport field, which is believed to extend across the Texas-Louisiana line at Logansport, gained attention twice during the year. The Hunter company brought in a wildcat, No. 1 Parker, for an initial gauge of 4,250,000 feet of gas on open flow through casing perforations at 4,953-5,085 feet, early in June. This test is located 3½ miles northeast of the town of Logansport, and is believed to be on the same structure which is producing gas and distillate in the Joaquin field to the southwest and across the state line in Shelby County, Texas.

In the Joaquin field, an inside test, completed in December, made an initial of 3 bbls. per hour of brown 55-gravity distillate and 7,000,000 feet of gas. Showings in this well indicate that oil is present down structure from the gas area which is producing at present on the Pickering Lumber Co. lease.

ARKANSAS

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas*
Bradley	1	0	1	0
Calhoun	5	4,655	2	0

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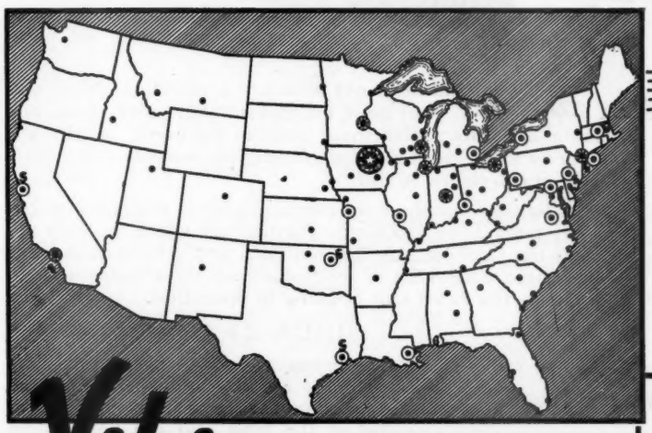

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Cleveland	3	0	3	0
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Crittenden	3	0	3	0
Dallas	1	0	1	0
Desha	3	0	3	0
Hempstead	2	0	2	0
Lafayette	3	1,695	1	0
Little River	1	0	1	0
Lonoke	1	0	1	0
Miller—Rodessa	54	24,830	2	1
Nevada	10	400	3	0
Ouachita	5	40	3	0
Pike	1	0	1	0
Pulaski	1	0	1	0
Sabine	1	0	1	0
Union	136	100,325	10	1
Total 1938	251	139,250	44	3

*Gas production: Columbia County, 40,000,000 ft.; Miller—Rodessa, 25,000,000 ft.; Union County, 1,500,000 ft.

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	22	16,040	2	1
February	11	6,650	2	0
March	19	11,980	2	0
April	26	14,025	8	0
May	29	18,720	6	0
June	19	10,205	2	0
July	14	9,990	0	0
August	23	11,760	5	0
September	22	6,965	6	0
October	20	10,630	1	2
November	22	12,940	7	0
December	24	9,345	3	0
Total 1938	251	139,250	44	3
Total 1937	182	68,495	78	1
Difference	69	70,755	34	2

EAST TEXAS BORDER

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas*
Bowie	2	0	2	0
Cass—Rodessa	13	3,090	1	1
Cass—Other	4	0	4	0
Harrison	2	5	0	1
Marion—Rodessa	102	33,840	0	5
Marion—Other	2	25	1	0
Panola	4	0	2	2
Shelby	6	265	5	1
Total 1938	135	37,225	15	10

*Gas production: Cass—Rodessa, 4,500,000 ft.; Harrison County, 18,000,000 ft.; Marion—Rodessa, 107,500,000 ft.; Panola County, 9,500,000 ft.; Shelby County, 40,000,000 ft.

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	9	2,195	2	1
February	9	3,900	1	0
March	20	5,890	4	0
April	15	5,215	2	0
May	13	2,530	0	2
June	14	4,800	0	0
July	12	3,990	0	0
August	10	2,045	4	1
September	8	2,215	0	0
October	8	840	2	2
November	9	1,895	0	2
December	8	1,710	0	2
Total 1938	135	37,225	15	10
Total 1937	289	96,070	33	19
Difference	154	58,845	18	9

NORTH LOUISIANA

Completions by Parishes for 1938

Parish—	Comp.	Prod.	Dry	Gas*
Bienville	4	0	2	2
Bossier	37	5,860	2	2
Caddo—Rodessa	28	9,700	0	1
Caddo—Other	134	7,500	37	7
Caldwell	2	0	2	0
Claiborne	107	81,650	10	3
Concordia	3	0	3	0
De Soto	31	430	18	6
Franklin	2	0	2	0
Grant	9	95	6	0
La Salle	20	615	5	0
Lincoln	22	14,235	3	0
Madison	2	0	2	0
Morehouse	18	0	1	17
Natchitoches	4	0	4	0
Ouachita	3	0	2	1
Red River	14	80	11	1
Sabine	59	5,190	26	0
Tensas	2	0	2	0
Union	33	0	1	32
Webster	87	42,615	5	44
Winn	1	0	1	0
Total 1938	622	167,970	145	116

*Gas production: Bienville Parish, 62,870,000 ft.; Bossier Parish, 100,000,000 ft.; Caddo Parish, 32,070,000 ft.; Claiborne Parish, 87,000,000 ft.; De Soto Parish, 29,530,000 ft.; Morehouse Parish, 94,412,000 ft.; Ouachita Parish, 1,500,000 ft.; Red River Parish, 5,000,000 ft.; Union Parish, 195,274,000 ft.; Webster Parish, 200,800,-

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	59	28,830	7	9
February	41	15,910	9	4
March	53	18,395	12	7
April	37	12,795	5	3
May	38	19,865	3	6
June	81	24,565	19	16
July	63	17,060	15	12
August	75	13,550	19	17
September	47	5,575	9	14
October	46	4,215	20	7
November	47	3,435	15	12
December	35	3,775	12	9
Total 1938	622	167,970	145	116
Total 1937	680	178,572	136	138
Difference	58	10,602	9	22

MISSISSIPPI

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas*
Calhoun	2	0	2	0
Claiborne	2	0	2	0
George	1	0	1	0
Harrison	1	0	1	0
Hancock	1	0	1	0
Hinds	7	0	4	3
Lamar	2	0	2	0
Perry	1	0	1	0
Rankin	3	0	0	3
Wilkinson	2	0	2	0
Yalobusha	3	0	3	0
Total 1938	25	0	19	6

*Gas production: Hinds County, 125,000,000 ft.; Rankin County, 130,000,000 ft.

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	3	0	3	0
February	1	0	1	0
March	2	0	2	0
April	5	0	5	0
May	1	0	0	1
June	1	0	0	1
July	1	0	0	1
August	1	0	1	0
September	1	0	0	1
October	2	0	2	0
November	2	0	1	1
December	5	0	4	1
Total 1938	25	0	19	6
Total 1937	26	0	23	3
Difference	1	0	4	3

ALABAMA

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Clarke	1	0	1	0
Houston	1	0	1	0
Mobile	1	0	1	0
Total 1938	3	0	3	0

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
April	2	0	2	0
May	1	0	1	0
Total 1938	3	0	3	0
Total 1937	2	0	2	0
Difference	1	0	1	0

No wells were completed or abandoned in Florida during 1938.

Removable Venturi Tube

TO get the most out of every production dollar you spend, you want equipment that saves time and labor and cuts replacement costs to the bone. *And that's exactly what the new MacClatchie Adjustable Flow Nipples are designed to do!*

They are simple to operate and easy to maintain on *any* Christmas Tree Hook-up. Turning the wheel quickly adjusts the flow for any desired rate, and a built-in indicating gauge, calibrated in fractional inch dimensions, tells at a glance the exact size opening in operation.

QUICK CHANGE

And here's the important point—the venturi tube and needle can be quickly and easily changed when worn, for a *single turn* of the wing nut permits *complete removal* of the tube and the needle can be quickly unscrewed with a small wrench. Simply reversing the operation puts both needle and venturi in full working order again. It's as easy as that! No bolts or nuts to remove, no flanges to pull when changing the needle and venturi tube, and no special wrenches required. *That means a big saving in time and labor*—an important factor in Christmas Tree maintenance where minutes count!

MacClatchie Adjustable Flow Nipples are made in all standard sizes, and are available in both high and low pressure models to meet every installation requirement. On high pressure types, the body and gland are made from solid bar stock, while low pressure types are made from high grade steel castings.

Send today for complete information.

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CIRCULATION IS NOT RESTRICTED IN ANY WAY . . . . . .

★ **Only valve on the market having a straight core** and sealing on both the upper and down stream sides of body, eliminating the possibility of sand working between plug and body, thereby causing same to freeze.

★ **Only valve having lubrication,** a feature that assures positive operation in an emergency.

A BLOWOUT PREVENTER DOES NOT AFFORD ENOUGH PROTECTION when drilling in a well in high pressure areas. It is as necessary to have protection inside the drilling string, as outside between drill stem and casing.

THE T-I-W LUBRICATED GRIEF STEM SAFETY VALVE prevents blowouts through the drill stem which result in cutting up of expensive pieces of equipment such as swivel and hose . . . . prevents fires . . . . reduces danger to lives of crew.

STREAM LINED so that cat line will not hang up on valve stem — another feature that protects crew and equipment.

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HOUSTON, TEXAS

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Annual Review

OIL OR GAS DISCOVERIES IN EACH OF ROCKY MOUNTAIN STATES

By T. R. INGRAM

Principal drilling activity in 1938 continued to be in Lea County. Fifteen of the eighteen pools had the proven limits of the productive area extended, two showed no change during the year, and one had a decrease of two in the number of units on production. One new oil field and one new gas field were discovered.

The new oil field was opened 5 miles west of the Eunice pool in what has been named the West Eunice field in F. C. Wilson and others No. 1 State, C SW NE Section 7-21s-35e, which was completed in November at 3,813 feet, total depth, for 127½ bbls. in six hours on the pump after being shot. It had the top of the pay at 3,778 feet, and elevation is 3,679 feet. It was shot with 100 quarts at 3,778-3,810 feet and made a 20-minute head. Same operators' No. 2 State, C NW NE Section 7, a north offset to the discovery, was completed in December at 3,785-3,868 feet after plugging back and produced 152 bbls. of oil in 20 hours through the 2½-inch tubing at 3,858 feet after being ecidized with 2,500 gallons.

The gas discovery was in the Lovington area 6 miles south and 2 miles east of the town of that name and approximately the same distance north and west of the Hobbs pool. It was completed in November while still approximately 1,000 feet above the objective on account of the imminent expiration of leases. It showed the existence of a prominent high with encouraging prospects for the opening of a new oil pool. The discovery was made in the Westmount Oil Co. No. 1 Amerada-State, C NW NE Section 12-17s-36e. It as completed in the Yates anhydrite zone at 3,986 feet, total depth. Elevation, 3,830 feet. Top of the anhydrite was at 1,890 feet; top of the salt at 1,995 feet; base of the salt at 2,867 feet, and top of the Yates at 3,060 feet. The 5-inch was cemented at 3,018 feet; and after drilling plug and washing, it made 12,800,000 feet through the tubing at 3,374 feet. When shut in it built up a pressure of 2,000 pounds on the tubing. After standing two days it was opened and gauged 21,000,000 feet. Final gauge showed 4,460,000 feet in 24 hours. It ran approximately 200 feet higher on the Yates than a well 1½ miles south and east by the Western Drilling & Engineering Co., a dry hole, thus defining structure.

Five wells were started in the general area immediately following the completion of the discovery. The Barnsdall Oil Co. No. 1 Humble-State, C NE SE Section 33-16-36, 5½ miles to the southwest, was abandoned in December at 4,997 feet on account of expiration of lease. The sand found in the Westmount well either was missing or was mudded off. It showed oil stains at 4,860-95 feet, but failed to respond when treated with 3,000 gallons of acid at 4,978 feet. Elevation is 3,902 feet. At the end of the year the Amerada company was drilling 6 miles to the south. Stanolind Oil & Gas Co. No. 1 State,

NEW MEXICO

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
ARTESIA, JACKSON AND MALJAMAR:													
Daily average	7,102	6,842	5,766	6,202	5,917	5,803	5,814	5,485	4,598	5,261	7,235	5,977	
Month	220,051	191,569	178,756	186,059	183,427	174,086	180,236	170,028	137,943	163,096	217,040	185,279	2,187,570
AZTEC:													
Daily average	8	8	8	6	8	6	5	5	5	5	6	5	
Month	236	225	236	192	250	180	162	162	152	156	180	155	2,286
COOPER:													
Daily average	4,766	4,948	4,803	4,910	4,712	4,415	4,469	4,786	4,736	4,488	4,930	4,414	
Month	147,729	138,537	148,908	147,286	146,061	132,456	138,524	148,355	142,081	139,122	147,892	136,829	1,713,780
EAVES:													
Daily average	1,059	1,044	1,046	962	912	826	871	924	923	843	881	826	
Month	32,823	29,223	32,426	28,486	28,282	24,788	27,003	28,644	27,680	26,135	26,438	25,611	337,539
EUNICE:													
Daily average	27,533	26,622	26,282	25,189	24,257	22,312	23,146	23,816	23,834	24,090	25,187	22,661	
Month	853,516	745,413	814,740	755,655	751,958	669,360	717,530	738,290	715,021	746,805	755,619	702,492	8,966,399
HARDY:													
Daily average	1,194	1,169	1,371	1,307	1,745	1,871	1,571	1,751	1,957	2,165	2,761	2,652	
Month	37,028	32,728	42,487	39,200	54,089	56,130	48,689	54,297	58,703	67,110	82,830	82,212	655,503
HOBBS:													
Daily average	15,824	15,678	15,334	14,326	14,027	12,684	13,168	13,042	13,128	13,200	13,716	11,705	
Month	490,551	438,996	475,369	429,787	434,842	380,520	408,200	404,302	393,755	409,202	411,478	362,847	5,039,849
HOGBACK:													
Daily average	197	202	204	186	180	202	192	142	200	190	194	198	
Month	6,119	5,657	6,319	5,593	5,575	6,058	5,952	4,418	6,018	5,891	5,818	6,140	69,558
JAL:													
Daily average	1,329	1,146	1,096	1,094	1,105	1,071	960	955	877	830	1,013	932	
Month	41,201	32,097	33,989	32,805	34,255	32,127	29,753	29,613	26,308	25,724	30,393	28,903	377,168
LANGLIE:													
Daily average	2,631	2,966	3,040	2,819	3,402	3,329	3,105	3,328	3,515	4,204	4,698	4,393	
Month	81,549	83,051	94,238	84,557	105,458	99,862	96,254	103,173	105,463	130,332	140,946	136,180	1,261,063
LYNCH:													
Daily average	706	683	667	636	560	541	600	612	619	597	569	504	
Month	21,873	19,118	20,687	19,090	17,363	16,226	18,598	18,981	18,562	18,515	17,059	15,627	221,699
LYNN:													
Daily average	583	709	737	828	805	768	799	868	836	829	884	808	
Month	18,072	19,847	22,855	24,840	24,970	23,051	24,765	26,917	25,089	25,693	26,532	25,039	287,670
MATTIX:													
Daily average	2,356	2,340	2,386	2,195	2,682	2,508	2,522	2,609	2,707	3,047	3,363	3,085	
Month	73,034	65,508	73,954	65,847	83,131	75,241	78,188	80,886	81,216	94,443	100,851	95,631	967,930
MONUMENT:													
Daily average	29,534	28,991	28,000	27,299	25,337	23,276	24,682	24,867	25,118	24,788	25,907	23,157	
Month	915,540	811,757	867,990	818,957	785,449	698,276	765,150	770,876	753,551	768,428	777,198	717,876	9,451,048
PENROSE:													
Daily average	3,829	3,989	4,246	4,029	4,712	4,700	3,959	3,944	4,073	4,533	5,765	5,442	
Month	118,713	111,705	131,638	120,869	146,076	141,009	122,715	122,262	122,192	140,538	172,960	168,703	1,619,380
RATTLESNAKE:													
Daily average	685	667	662	710	677	665	799	861	580	515	627	617	
Month	21,221	18,671	20,524	21,291	20,994	19,959	24,765	26,686	17,403	15,960	18,813	19,138	245,425
RHOADES:													
Daily average	74	83	89	79	90	135	144	111	124	117	139	157	
Month	2,281	2,332	2,755	2,367	2,786	4,044	4,460	3,428	3,732	3,639	4,175	4,879	40,878
SKELLY:													
Daily average	1,607	1,690	1,638	1,439	1,581	1,579	1,399	1,372	1,267	1,359	1,963	1,806	
Month	49,829	47,331	50,763	43,164	49,016	47,370	43,358	42,546	37,999	42,128	58,881	55,980	568,365
SOUTH EUNICE:													
Daily average	2,621	2,566	2,805	2,763	2,745	2,696	2,785	2,726	2,876	2,955	3,161	2,933	
Month	81,254	71,846	86,945	82,887	85,088	80,869	86,340	84,495	86,272	91,620	94,827	90,912	1,023,355
TABLE MESA:													
Daily average	53	111	38	115	80	88	73	81	92	26	66	82	
Month	1,647	3,113	1,182	3,441	2,481	2,645	2,259	2,509	2,756	802	1,980	2,553	27,368
VACUUM:													
Daily average	389	662	1,234	1,119	1,440	1,692	2,306	2,846	3,346	3,524	4,988	5,455	
Month	12,072	18,530	38,239	33,570	44,629	50,762	71,488	88,215	100,384	109,245	149,629	169,114	885,877
GETTY:													
Daily average	.....	.....	.....	275	105	100	49	164	.....	236	297	249	
Month	.....	.....	.....	8,259	3,247	3,000	1,518	5,080	.....	7,302	8,899	7,720	45,025
BARBER:													
Daily average	.....	.....	.....	.....	.....	.....	193	74	184	.....	.....	.....	
Month	.....	.....	.....	.....	.....	.....	5,973	2,298	5,521	.....	.....	.....	13,792
Daily average	104,075	103,116	101,452	98,473	97,078	91,267	93,609	95,370	95,593	97,803	108,348	98,059	98,653
Total 1938	3,226,339	2,887,254	3,145,000	2,954,202	3,009,427	2,738,019	2,901,880	2,956,461	2,867,801	3,031,886	3,250,438	3,039,820	36,008,527
Total 1937	2,744,129	2,735,529	3,116,093	3,156,154	3,412,581	3,430,106	3,436,277	3,399,083	3,389,442	3,241,495	3,109,259	3,267,924	38,438,072
Total 1936	1,865,049	1,838,608	2,097,447	2,055,198	1,303,441	2,183,776	2,235,797	2,329,632	2,251,558	1,510,447	2,469,218	2,506,288	26,647,459
Total 1935	1,627,833	1,379,563	1,599,331	1,535,989	1,626,572	1,660,519	1,802,167	1,797,597	1,734,400	1,806,363	1,773,725	1,810,262	20,154,321
Total 1934	1,285,867	1,129,208	1,277,794	1,370,695	1,407,997	1,380,044	1,452,055	1,515,828	1,428,202	1,416,231	1,369,447	1,405,510	16,438,878

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HOUSTON, TEXAS

C SW SE Section 1-17-36, was drilling below 4,300 feet and had a gas blowout at 3,906 feet. Skelly Oil Co. was drilling 1½ miles to the north, and Repollo was drilling 4 miles to the south and a little east of the discovery.

On January 1, 1939, there were 2,020 40-acre units on production in Lea County, of which 1,754 units were nonmarginal wells producing the top allowable and 266 were marginal wells allowed to produce at capacity. This was an increase during 1939 of 401 units, net, of which 320 were nonmarginal and 81 were marginal. On the basis of 40 acres to the unit, this indicated a productive proven area of 80,800 acres for all pools, extensions during the year adding 16,040 acres to the proven areas.

The Vacuum area showed the most intensive drilling campaign, the field being gradually developed outward with a total of 126 units being added to the proven area, all but five having been drilled during the year. Only 2 of the 126 units were classed as marginal wells. At the end of the year there were 131 40-acre units on production.

The Penrose pool in Township 22s-37e came second with a total of 133 units on production at the end of the year, of which 52 were brought into production during 1938. However, the wells as a rule were comparatively small, and 27 of the 52 new units cannot make the top allowable per well. Of the 133 units at the close of the year, 51 were classed as marginal wells.

The number of units on production January 1, 1939, and the increase during 1938, for all Lea County pools are as follows:

	Jan. 1, 1939			Increase		
	Marg.	Non-marg.	Ttl.	Marg.	Non-marg.	Ttl.
Cooper	15	80	95	*1	8	7
Lynn	6	13	19	1	7	8
Lynch	1	10	11	0	0	0
North Lynch	2	0	2	0	0	0
West Eunice†	0	2	2	0	2	2
Eunice	45	434	479	11	27	38
Hardy	30	45	75	8	29	37
South Eunice	13	54	67	6	18	24
Langlie	14	84	98	6	39	45
Mattix	19	58	77	8	21	29
Penrose	51	82	133	27	25	52
Skelly	15	30	45	3	8	11
Skaggs‡	3	0	3	3	0	3
Hobbs	4	248	252	0	1	1
Jal	15	13	28	*3	1	*2
Eaves	4	15	19	2	0	2
Rhoades	6	0	6	5	*2	3
Vacuum	2	129	131	2	124	126
Monument	21	457	478	3	12	15
Total, net	266	1,754	2,020	81	320	401

*Denotes decrease. †Discovered in 1938. ‡Discovered in 1937.

Top allowable per well under proration was 67 bbls. per day on January 1, 1938, and 48 bbls. per day on January 1, 1939. The Monument proration continued to be based on bottom-hole pressure and Hobbs on an acreage-potential basis.

NEW MEXICO

Completions by Counties in 1938

	Comp.	Prod.	Dry	Gas
Lea	469	175,118	35	14
Eddy	70	6,191	15	2
Chaves	4	0	4	0
Curry	1	0	1	0
Otero	2	0	2	0
McKinley	4	160	1	0
Rio Arriba	3	0	3	0
San Juan	25	824	6	1
Torrance	1	0	0	1
Total, 1938	579	182,293	67	18

Completions by Months

	Comp.	Prod.	Dry	Gas
January	41	14,422	4	1
February	40	15,110	8	0
March	55	21,876	8	4
April	48	17,678	4	0
May	41	14,787	5	2
June	41	13,157	1	0
July	38	10,193	2	1
August	57	15,391	9	5
September	59	9,425	8	1
October	57	15,730	7	1
November	44	19,948	6	2
December	58	14,576	5	1
Total, 1938	579	182,293	67	18
Total, 1937	665	541,861	64	27
Difference	86	359,568	3	9

WYOMING

Results for 1938 in Wyoming included two oil discoveries, one of major and the other of minor importance; two gas discoveries and seven extensions of proven areas in producing fields, of which five were for oil and two for gas.

The major oil discovery was in the General Petroleum Corp. No. 1 Government, C NW SE Section 21-35n-77w, on the Cole Creek structure, 9 miles northwest of the Big Muddy field and 14 miles northeast of Casper. It was completed in June at 8,019 feet, 3 feet in the Morrison shale. The pay is in the Lakota sand at 7,978 feet, where the 6⅝-inch was cemented, to 8,016 feet with a shale break at 7,997-8,002 feet. On a week's pumping test it averaged 10 bbls. an hour, the best gauge being 336 bbls. in 24 hours. The crude tested 32.7 gravity on the A.P.I. scale, with less than one-tenth of 1 per cent sulfur. Analyses showed gasoline and naphtha, 21.4 per cent; kerosene distillate, 15.6 per cent; viscous lubricating distillate, 12.3 per cent; gas oil, 10.1 per cent; medium lubricating distillate, 3.8 per cent; residuum, 34.7 per cent; loss, 2.1 per cent. Surface elevation of well is 5,600 feet. Tops were as follows: Mesa Verde, 2,240 feet; Shannon sand, 4,500 feet, good show oil and gas; Frontier sand, 6,740 feet, some oil saturation; Muddy sand, 7,920-26 feet, some saturation; Dakota, 7,974-79 feet, some saturation. General Petroleum Corp. has a unitized block of 15,000 acres, solid except for 320 acres held by the Stanolind Oil & Gas Co. At the end of the year the company was drilling its second well 1¼ miles to the north in its No. 1 State, NW NE SE Section 16-35n-77. Elevation, 5,640 feet. Tops so far released are as follows: Mesa Verde, 2,450 feet; Shannon, 4,625 feet.

The other oil discovery was on the North Big Hollow structure in Albany County in G. R. McConnell No. 1 Government, CWL SW SE Section 6-15n-75w, completed in the Muddy sand at 890-920 feet for 25 bbls. per day of 21-gravity black oil after plugging back from 1,065 feet. No additional wells have been drilled.

The most important of the gas discoveries was made in June on the Oil Springs structure in the Cunningham Oil Co., Inc., No. 1 Union Pacific-Cronberg, SE NE SE Section 3-23n-79w, 5 miles north of the nearest gas well in the Allen Lake gas field and 12 miles north of the Big Medicine Bow oil and gas field. It was completed in the basal Sundance at 2,315 feet, total depth, for 55,000,000 cu. ft. per day with a rock pressure of 1,100 pounds. The 7-inch is at 2,232 feet and the elevation is 6,806 feet. First drill stem test at 2,225-67 feet in the upper Sundance showed

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THE OIL AND GAS JOURNAL
January 15, 1931
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Organizations which show a profit this time next year will have been managed by men who adhere strictly to fundamental principles of economy and efficiency • Consistent use of Quality Products is the only true operating economy—the only true efficiency • 1931 will richly reward men in the oil and gas industry who recognize this known truth •
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SUPPLY CORPORATION

TULSA, OKLAHOMA

3,880,000 cu. ft.; the second at 2,267-87 feet, showed 9,210,000 cu. ft. and the third at 2,287–2,315 feet gauged 27,000,000 cu. ft. Casing was then set and well completed for 55,000,000 cu. ft. initially. The Ohio Oil Co. then drilled its No. 2-A Baker in the NW SW SW Section 2, a diagonal offset on the southeast to the discovery and had the Sundance at 2,512-2,710 feet with gas in the top and water in the base. It was abandoned and the rig was skidded 400 feet north for

WYOMING

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
SALT CREEK:													
Daily average	15,247	15,668	16,437	16,046	15,648	15,633	14,872	15,790	15,964	15,295	14,275	15,215	
Month	472,660	438,714	509,556	481,389	485,085	468,990	461,030	489,500	478,910	474,130	428,240	471,670	5,659,874
BADGER BASIN:													
Daily average	230	190	150	167	153	146	.....	.....	.....	180	180	176	
Month	7,150	5,320	4,650	5,000	4,752	4,376	.....	.....	.....	5,580	5,400	5,461	47,689
BIG MUDDY:													
Daily average	1,186	1,283	1,281	1,276	1,154	1,154	1,184	1,192	1,187	1,177	1,199	1,183	
Month	36,780	35,930	39,712	38,276	35,777	34,627	36,693	36,960	35,608	36,492	35,960	36,681	439,496
BLACK MOUNTAIN:													
Daily average	.....	100	150	150	148	143	135	136	140	130	137	135	
Month	.....	2,800	4,650	4,500	4,575	4,284	4,185	4,200	4,200	4,030	4,100	4,185	45,709
BOLTON CREEK:													
Daily average	7	.....	24	7	19	.....	12	11	3	5	.....	.....	
Month	223	.....	731	206	594	.....	380	329	87	160	.....	.....	2,710
BYRON:													
Daily average	2,531	.....	2,039	.....	14	1,135	41	2,665	2,559	.....	2,610	3,938	
Month	78,471	.....	63,209	.....	427	34,062	1,264	82,618	76,782	.....	78,310	122,069	537,212
DALLAS DERBY:													
Daily average	559	560	582	593	448	521	351	354	349	354	347	349	
Month	17,339	15,667	18,034	17,775	13,872	15,627	10,887	10,966	10,483	10,979	10,431	10,825	162,885
DUTTON CREEK:													
Daily average	49	55	40	52	51	52	50	54	51	55	46	71	
Month	1,521	1,531	1,230	1,554	1,584	1,563	1,545	1,685	1,532	1,709	1,425	2,200	19,079
ELK BASIN:													
Daily average	20	24	27	28	26	29	202	559	589	581	595	569	
Month	627	554	849	827	813	870	6,252	17,336	17,678	18,010	17,842	18,779	100,437
FRANNIE:													
Daily average	1,566	979	1,190	1,793	1,941	2,329	539	618	584	2,223	1,976	1,870	
Month	48,533	27,404	36,894	53,775	60,165	69,866	16,712	19,152	17,521	68,901	59,268	57,965	536,156
GARLAND:													
Daily average	1,823	1,763	1,811	2,132	2,478	2,613	2,454	2,411	2,356	2,308	1,685	1,969	
Month	56,514	49,354	56,128	63,966	76,829	78,397	76,074	74,753	70,671	71,543	50,864	61,047	786,140
GRASS CREEK:													
Daily average	49	7	13	13	2,008	2,405	2,078	1,912	2,098	1,962	1,941	1,897	
Month	1,528	200	393	387	62,236	72,150	64,418	59,275	62,949	60,810	58,238	58,800	501,384
GREYBULL:													
Daily average	.....	.....	.....	5	.....	.....	3	3	4	.....	.....	.....	
Month	.....	.....	.....	150	.....	.....	86	101	114	.....	.....	.....	451
HAMILTON DOME:													
Daily average	.....	321	.....	1,631	1,427	2,233	784	1,150	989	274	283	.....	
Month	.....	9,000	.....	48,918	44,234	67,000	24,302	35,646	29,684	8,500	8,485	.....	275,769
HIDDEN DOME:													
Daily average	160	150	140	135	125	134	110	110	105	78	60	70	
Month	4,960	4,200	4,342	4,056	3,875	4,020	3,410	3,410	3,150	2,418	1,800	2,170	41,811
HUDSON:													
Daily average	301	297	299	303	261	248	217	246	216	227	237	233	
Month	9,330	8,324	9,257	9,079	8,076	7,446	6,734	7,623	6,474	7,045	7,108	7,228	93,724
IRON CREEK:													
Daily average	13	.....	38	13	26	.....	13	.....	27	26	.....	29	
Month	415	.....	1,182	404	822	.....	412	.....	821	817	.....	899	5,772
LABARGE:													
Daily average	976	1,014	979	923	942	927	898	884	895	922	896	895	
Month	30,267	28,378	30,346	27,691	29,208	27,813	27,844	27,406	26,837	28,584	26,866	27,740	338,980
LANCE CREEK:													
Daily average	11,851	10,629	9,902	13,583	11,825	12,583	15,950	13,112	14,354	13,219	13,456	12,480	
Month	367,372	297,602	306,949	407,494	366,581	377,484	494,440	406,474	430,606	409,783	403,675	386,889	4,655,349
LOST SOLDIER:													
Daily average	1,518	1,612	1,674	1,526	1,691	1,685	1,783	1,772	1,731	1,745	1,358	1,863	
Month	47,052	45,130	51,889	45,772	52,423	50,550	55,276	54,930	51,933	54,100	40,741	57,748	607,544
MEDICINE BOW:													
Daily average	3,626	3,580	2,180	3,111	3,222	3,166	3,180	2,965	3,523	2,946	2,287	2,823	
Month	112,393	100,234	98,581	93,335	99,867	94,991	98,591	91,908	105,698	91,324	68,596	87,512	1,143,030
MIDWAY:													
Daily average	31	35	41	31	30	35	32	31	34	35	.....	39	
Month	953	992	1,269	915	1,074	1,052	1,002	949	1,022	1,094	.....	1,210	11,532
OREGON BASIN:													
Daily average	1,450	1,994	1,851	2,048	3,138	2,597	3,998	4,744	5,011	1,801	2,198	2,075	
Month	44,942	55,837	57,391	61,444	97,270	77,903	123,924	147,056	150,332	55,839	65,940	64,321	1,002,199
OSAGE:													
Daily average	704	893	910	952	781	865	755	784	850	761	801	780	
Month	21,810	25,012	28,200	28,570	24,210	25,956	23,400	24,300	25,500	23,585	24,030	24,188	298,761
PILOT BUTTE:													
Daily average	20	21	20	20	20	20	.....	.....	.....	.....	.....	.....	
Month	622	580	620	600	620	612	.....	.....	.....	.....	.....	.....	3,654
QUEALY DOME:													
Daily average	825	815	687	762	739	751	755	771	757	695	636	683	
Month	25,578	22,816	21,286	22,874	22,910	22,521	23,409	23,903	22,708	21,459	19,081	21,177	269,722
REX LAKE:													
Daily average	17	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	518	982	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500
ROCK RIVER:													
Daily average	2,050	2,782	2,244	1,843	578	898	1,783	1,725	1,622	1,226	1,659	2,206	
Month	63,540	77,905	69,551	55,296	17,913	26,944	55,261	53,475	48,671	38,017	49,777	68,379	624,729
POISON SPIDER:													
Daily average	273	281	284	283	252	271	258	348	285	240	251	237	
Month	8,476	7,868	8,802	8,499	7,826	8,128	7,995	10,793	8,536	7,453	7,539	7,347	99,262
SOUTH CASPER CREEK:													
Daily average	492	485	492	449	490	469	87	.....	.....	.....	.....	.....	
Month	15,247	13,579	15,252	13,473	15,199	14,070	2,681	.....	.....	.....	.....	.....	98,501
SPINDLETOP:													
Daily average	24	21	25	38	31	35	29	25	37	26	25	26	
Month	730	575	762	1,143	968	1,047	910	752	1,101	802	744	806	10,340
TEAPOT (Outside):													
Daily average	15	23	20	21	21	20	20	19	21	21	14	17	
Month	471	637	605	622	660	606	628	586	640	643	428	527	7,053
WAUGH DOME:													
Daily average	167	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Month	5,176	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,176
WERTZ:													
Daily average	815	856	700	1,327	915	1,123	957	987	1,492	1,492	1,283	1,364	
Month	25,255	29,972	21,706	39,795	28,360	33,694	29,679	30,607	44,751	46,254	38,508	42,284	404,865
WARM SPRINGS:													
Daily average	18	75	75	110	110	110	140	140	150	140	137	141	
Month	550	2,100	2,335	3,300	3,410	3,297	4,340	4,340	4,500	4,340	4,125	4,370	41,007
MULE CREEK:													
Daily average	.....	.....	145	.....	.....	.....	85	154	85	200	200	200	
Month	.....	.....	4,500	.....	.....	.....	2,635	4,788	2,550	6,200	6,000	6,200	32,873
COLE CREEK:													
Daily average	.....	.....	.....	.....	.....	.....	97	73	108	79	109	109	
Month	.....	.....	.....	.....	.....	.....	3,016	2,277	3,240	2,443	3,283	3,375	17,634
CODY DOME:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	85	80	50	70	
Month	.....	.....	.....	.....	.....	.....	.....	.....	2,550	2,480	1,500	2,182	8,712
DEWEY DOME:													
Daily average	.....	.....	.....	.....	.....	.....	132	132	132	10	10	10	
Month	.....	.....	.....	.....	.....	.....	4,092	4,092	3,960	310	300	310	13,064
MAHONEY DOME:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	225	217	.....	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,987	6,505	.....	13,492
Daily average	48,613	46,543	47,447	51,370	50,717	54,332	53,984	61,864	58,393	50,736	51,170	53,759	51,935
Total 1938	1,507,003	1,303,197	1,470,861	1,541,085	1,572,215	1,629,946	1,673,507	1,732,190	1,751,799	1,572,821	1,535,109	1,666,544	18,956,277
Total 1937	1,437,401	1,441,921	1,669,575	1,618,595	1,632,815	1,523,962	1,670,691	1,787,753	1,781,514	1,798,817	1,628,841	1,645,336	19,637,218
Total 1936	1,062,556	972,486	1,153,448	1,081,830	1,124,370	1,059,420	1,204,443	1,243,875	1,275,150	1,332,256	1,427,400	1,331,605	14,268,839
Total 1935	1,028,439	936,981	1,019,743	1,118,852	1,084,698	1,160,513	1,097,308	1,222,012	1,182,983	1,136,513	1,083,110	1,166,613	13,237,765
Total 1934	895,359	872,848	972,970	936,548	1,111,533	1,013,668	1,156,279	1,183,686	1,063,429	1,132,993	1,080,162	1,069,520	12,488,995

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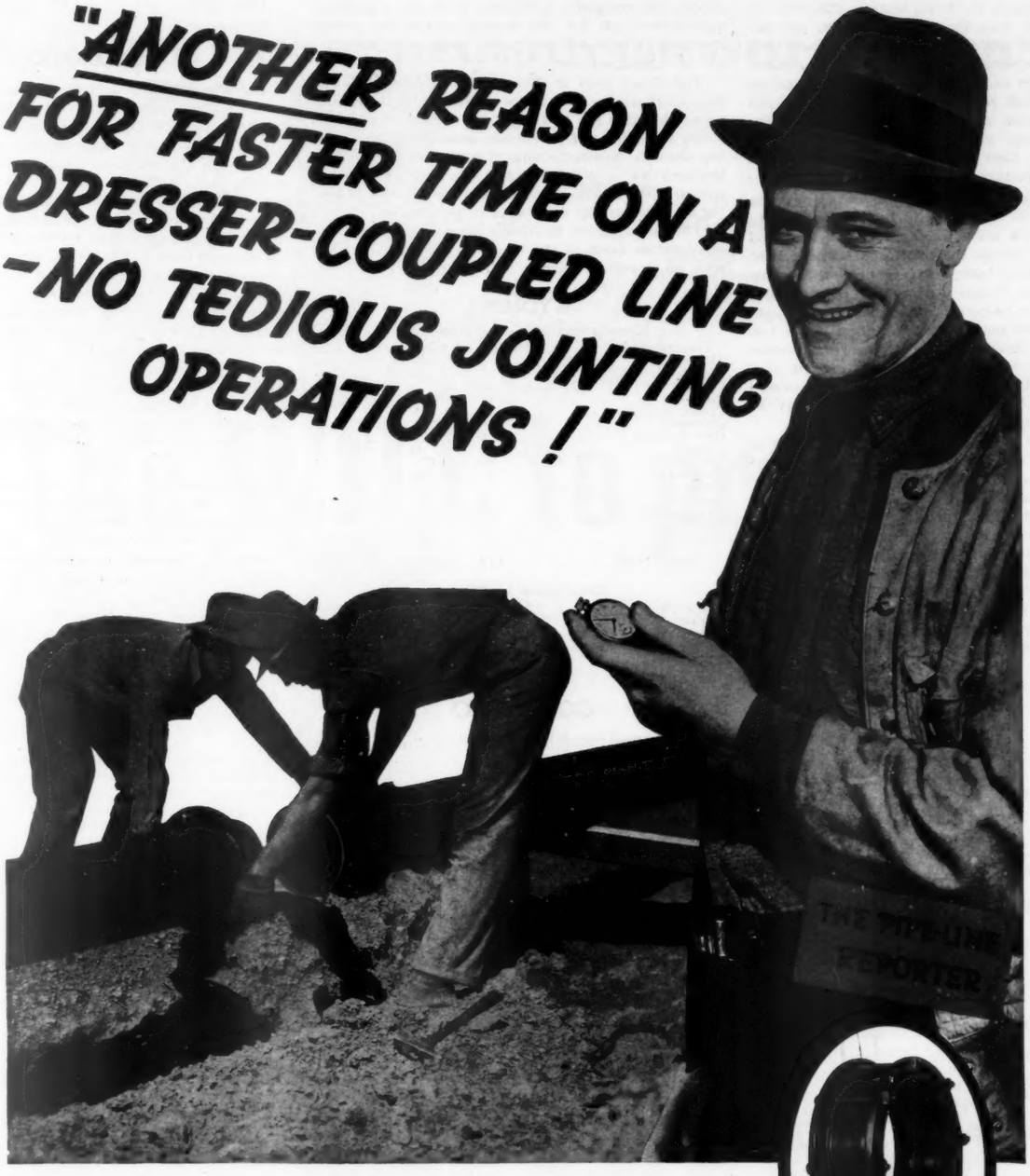

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Dresser *simplicity* does away with complicated "getting-ready" operations. It eliminates, for example, the tedious matching up of pipe ends prior to joint-making, since the coupling middle-ring automatically centers the pipe. It lets unskilled labor *assemble* the joints with "1-2-3" precision. No "lags" hold up work. Jointing is always up with laying.

NOTE TO READER: This is the seventeenth in a series of advertisements dramatizing one engineer's experience with his first Dresser-coupled line. For the complete story write for Bulletin 351.

DRESSER

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In Canada: Dresser Mfg. Company, Ltd., 60 Front Street, West, Toronto, Ont.

No. 3-A Baker, which was completed in December at 2,353 feet for 20,000,000 cu. ft. with a rock pressure of 1,110 pounds. The 6⅝-inch in this well was set at 2,218 feet.

The other gas discovery was made by the Stanolind Oil & Gas Co. on the Beaver Creek structure, 14 miles east of the town of Riverton, in Fremont County in its No. 1 Government, C SE SE Section 3-33n-96w. It was completed in June for 9,000,000 cu. ft. per day through perforated casing opposite the Morrison sand at 8,230-85 feet. It tested the Nuggett or basal Sundance sand at 8,809-8,920 feet, which showed water and no oil or gas. A 7-inch liner was then set at 7,387-8,915 feet and perforated opposite the pay. Top of the Sundance formation was at 8,490 feet and the base of the Frontier at 7,360 feet. No other wells have been drilled on the structure.

The most important extensions of proven areas in producing oil fields took place in Lance Creek where approximately 1,500 acres were proven for Leo sand production. This brings the total area for that sand up to approximately 5,000 acres. Estimates on probable recovery were increased from 5,000 bbls. to 6,000 bbls. per acre, due to better sand conditions disclosed by well logs, which puts the total reserves in the Leo sand at around 30,000,000 bbls. This, with reserves in the Sundance and Converse sands, indicate that ultimately better than 70,000,000 bbls. will be recovered from the field. This is inclusive of what may be developed later by deeper drilling.

There were 25 completions in the field in 1938 of which 17 were producers in the Leo sand; five in the Sundance, one gas well in the Leo and two dry holes. Initial new production of Leo sand wells aggregated 26,545 bbls. per day and in the Sundance, 3,721 bbls.

The wells drilled to the Leo sand mostly were located around the edges of or outside the limits of the Sundance sand pool for the purpose of determining the productive area in that horizon rather than for developing new production.

The productive area of the Hamilton dome field in Hot Springs County was extended three-fourths of a mile to the northwest and one-fourth of a mile east in two wells drilled by the Italo Petroleum Corp. No. 1 Phebus-Government, NW NW SW Section 11-44n-98w, was completed in January in the Embar at 3,246 feet, total depth, for 100 bbls. per day. In June it was deepened into the Tensleep to 3,335 feet and after acidizing pumped 400 bbls. per day. The eastern extension was completed in October in its No. 1 Skelton-Government, SE SW NE Section 13-44n-98w, which averaged 73 bbls. per day on the pump from the Embar at 2,820-2,901 feet.

The Osage field in Weston County was extended three-fourths of a mile to the southwest in two wells. George Keisling No. 1, NW NE NE Section 35-46n-64w, half a mile ahead of production, swabbed 96 bbls. per day from the Newcastle sand at 1,956 feet, and Updike Brothers No. 1, NE SW NE Section 35, carried the new area one-fourth of a mile to the southwest, pumping 40 bbls. per day from sand at 2,027-39 feet.

The Quealy field in Albany County was extended one location north in the California Co. No. 12 Holst, with no important change in formations.

WYOMING

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Albany	4	205	1	0
Big Horn	3	6,015	1	0
Carbon	18	3,570	7	4
Converse	17	50	12	4
Crook	1	8	0	0
Fremont	8	218	3	2
Hot Springs	8	434	2	0
Lincoln	1	0	0	1
Natrona	10	1,671	1	0
Niobrara	31	31,401	4	1
Park	7	457	1	3
Sublette	2	67	0	0
Sweetwater	11	914	1	3
Washakie	4	0	3	1
Weston	32	623	7	0
Total, 1938	157	45,633	43	19

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	12	3,422	1	4
February	12	957	2	2
March	17	7,802	7	3
April	8	5,284	2	0
May	18	4,302	5	2
June	9	1,992	2	1
July	22	4,732	9	3
August	8	784	1	0
September	9	389	3	0
October	17	4,596	3	1
November	10	2,743	3	1
December	14	8,630	3	2
Total, 1938	157	45,633	43	19
Total, 1937	127	40,745	43	12
Difference	30	4,888	0	7

COLORADO

The sole discovery in Colorado in 1938 was Texas Co. No. 1 Unit, SW SE NW Section 35-3n-94w, jointly with the California Co., on the Wilson Creek structure in Rio Blanco County. Late in 1937 it showed for a producer in the Morrison formation, but completion was not made until February. It was drilled to 6,918 feet, 1,131 feet above sea level. It recovered cores from the Sundance at 6,824-98 feet showing some saturation, but was unable to make a drill stem test. It was plugged back to 6,817 feet, where the 7-inch was cemented. After drilling plug and scrapping the walls of the upper part of the Sundance, a tester was run and it filled with water. The casing then was perforated at 6,665-85 feet, opposite the Morrison sand, and the well flowed 492 bbls. of 46-gravity paraffin-base oil in 24 hours through the 2⅛-inch tubing. It was then shut in. Elevation is 8,051 feet. No additional wells have been drilled. The well was put on a production test late in the year and shipments out of the field by truck were reported at around 300 bbls. a day.

An extension of the oil producing area in the Hiawatha gas field in northern Moffat County took place in October with the recompletion of the Mountain Fuel Supply Co. No. 1 Kuykendall, NE NE SE Section 22-12n-100w. The well was completed in 1927 for 37,000,000 cu. ft. of gas in a sand in the Wasatch formation of Tertiary age at 1,992-2,025 feet. In 1935 deepening operations were resumed and hole was drilled to 2,790 feet. At the end of 1936 it was plugged back to 2,495 feet, where the 4¾-inch was cemented and the

COLORADO

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
FORT COLLINS:													
Daily average	52	56	78	100	48	83	104	108	109	98	110	93	
Month	1,616	1,558	2,413	3,002	1,495	2,490	3,229	3,352	3,351	3,053	3,309	2,889	31,757
FORENCE AND CANYON CITY:													
Daily average	150	152	193	165	204	217	160	164	191	145	159	165	
Month	4,660	4,261	5,994	4,946	6,324	6,515	4,952	5,073	5,720	4,503	4,783	5,112	62,843
ILES DOME:													
Daily average	3,009	2,537	2,433	2,559	2,379	2,215	2,022	2,073	1,985	1,811	1,883	2,032	
Month	93,276	71,037	75,430	76,777	73,764	66,440	62,669	64,249	59,563	56,150	56,480	62,987	818,822
ORCHARD:													
Daily average	.....	17	48	40	23	45	35	30	36	42	32	26	
Month	.....	487	1,488	1,192	709	1,356	1,086	942	1,088	1,307	968	806	11,429
PRICE:													
Daily average	535	513	6	453	569	518	491	532	547	521	551	522	
Month	16,598	14,368	191	13,583	17,632	15,537	15,211	16,491	16,397	16,156	16,541	16,191	174,896
RANGELY:													
Daily average	95	77	85	84	98	118	85	79	67	45	94	63	
Month	2,956	2,167	2,635	2,510	3,041	3,545	2,627	2,437	1,997	1,391	2,812	1,957	30,075
TOW CREEK:													
Daily average	140	156	171	182	163	170	156	169	150	164	107	142	
Month	4,349	4,362	5,298	5,462	5,065	5,092	4,845	5,231	4,496	5,072	3,218	4,410	56,900
WELLINGTON:													
Daily average	203	244	218	183	217	210	194	206	222	212	213	229	
Month	6,303	6,825	6,744	5,499	6,727	6,306	6,023	6,394	6,645	6,560	6,377	7,100	77,503
WILSON CREEK:													
Daily average	.....	.....	.....	.....	.....	.....	155	349	257	268	294	635	
Month	.....	.....	.....	.....	.....	.....	4,795	10,832	7,703	8,319	8,809	19,691	60,149
Daily average	4,186	3,752	3,232	3,766	3,702	3,576	3,401	3,710	3,565	3,307	3,443	3,908	3,628
Total 1938	129,758	105,065	100,193	112,971	114,757	107,281	105,437	115,001	106,960	102,511	103,297	121,143	1,324,374
Total 1937	103,705	115,079	138,643	131,611	135,891	136,658	142,256	145,918	127,772	134,896	131,207	134,755	1,578,391
Total 1936	102,827	111,012	131,502	154,860	149,978	143,760	139,748	150,102	145,410	151,249	117,240	115,072	1,612,760
Total 1935	109,690	111,743	148,149	146,635	150,325	133,302	129,285	130,789	130,040	129,747	118,031	117,806	1,555,542
Total 1934	88,065	77,836	80,388	75,132	94,308	84,689	106,700	113,937	107,104	97,154	102,058	103,004	1,130,375

MONTANA

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
BORDER:													
Daily average	76	63	.....	111	.....	110	67	68	42	59	113	40	
Month	2,350	1,751	.....	3,329	.....	3,296	2,084	2,119	1,255	1,837	3,394	1,251	22,666
CAT CREEK:													
Daily average	639	600	503	623	552	591	607	552	579	559	519	555	
Month	19,802	16,802	15,582	18,693	17,103	17,742	18,828	17,117	17,379	17,328	15,572	17,196	209,144
CUT BANK:													
Daily average	6,531	7,003	7,405	8,023	7,440	8,016	7,410	8,159	7,623	7,821	8,277	7,379	
Month	202,452	196,107	229,548	240,690	230,647	240,480	229,724	252,917	228,687	242,442	248,310	228,756	2,770,760
DRY CREEK:													
Daily average	604	1,064	1,004	1,607	1,420	1,420	945	566	746	683	673	435	
Month	18,725	29,799	31,137	48,214	44,016	42,589	29,291	17,547	22,387	21,179	20,193	13,492	338,569
KEVIN-SUNBURST:													
Daily average	3,318	3,229	3,203	3,766	3,420	3,774	3,538	3,394	3,576	3,478	3,631	3,463	
Month	102,856	90,406	99,300	112,970	106,018	113,228	109,679	105,209	107,286	107,820	108,944	107,350	1,271,066
PONDERA:													
Daily average	705	883	773	583	631	712	425	420	522	412	372	575	
Month	21,868	24,714	23,952	17,503	19,568	21,363	13,173	13,023	15,663	12,970	11,157	17,818	212,712
Daily average	11,873	12,842	12,888	14,713	13,463	14,623	12,993	13,159	13,089	13,017	13,586	12,447	13,219
Total 1938	368,053	359,579	399,519	441,399	417,352	438,698	402,779	407,932	392,657	403,516	407,570	385,863	4,824,917
Total 1937	413,728	413,356	484,552	548,209	560,824	540,559	577,066	543,372	459,623	414,541	392,572	450,962	5,799,364
Total 1936	369,148	295,191	482,391	488,100	532,053	516,660	495,132	461,094	566,610	516,491	502,260	573,531	5,798,661
Total 1935	348,101	302,697	321,665	323,965	325,205	312,071	403,140	415,226	398,069	410,648	409,182	397,259	4,367,228
Total 1934	223,641	196,789	220,434	235,504	275,544	247,687	329,577	353,263	321,510	367,863	367,837	369,366	3,509,015

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well was shut down without testing. October last, the casing was perforated at 2,472-83 feet and a pumping test was started. It made around 100 bbls. per day in two eight-hour periods at the start and for the 60-day period it averaged 80 bbls. The oil comes from sandy shale and is 47 gravity. The location is three-fourths of a mile southwest of the same company's No. 4-B Florence Wilson, which was completed in 1934 for 20 bbls. per day at 2,345 feet after plugging back from 3,797 feet. The two wells prove up around 600 acres as productive for oil and it is estimated that the field ultimately will produce 10,000 bbls. to the acre. Hiawatha has 10 gas wells which produce around 2,500,000,000 cu. ft. a year. The gas is transported into Utah.

COLORADO

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Archuleta	2	0	2	0
Boulder	1	0	1	0
Cheyenne	1	0	1	0
Fremont	2	21	0	0
Grand	1	0	1	0
Huerfano	2	5	0	1
a Planta	1	0	1	0
Las Animas	1	0	1	0
Moffat	3	430	0	0
Park	1	0	1	0
Rio Blanco	1	492	0	0
Routt	2	0	2	0
Total, 1938	18	948	10	1

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	0	0	0	0
February	2	492	1	0
March	0	0	0	0
April	1	18	0	0
May	3	0	3	0
June	1	0	0	1
July	2	250	1	0
August	2	0	2	0
September	2	5	1	0
October	3	180	1	0
November	2	3	1	0
December	0	0	0	0
Total, 1938	18	948	10	1
Total, 1937	27	900	23	2
Difference	9	48	13	1

MONTANA

Montana chalked up one oil discovery, one extension of a producing oil pool and one gas discovery in a deeper horizon. Drilling in the state was about half of what it was in 1937, due to curtailment of export markets to Canada.

The oil discovery was made in the Yukon Oil Co. No. 1 Lungren, SE SE SW Section 23-37n-5w, 4½ miles north of the nearest gas well in Cut Bank and 7 miles north of the nearest oil well. It is just south of the Canadian line; three-fourths of a mile south and a little east of the Santa Rita Oil & Gas Co. and P. T. Sweeney No. 1 Jacobson, a discovery in 1933 in the Cut Bank sand; and 2½ miles west of A. B. Cobb No. 1 State, a gas discovery in the Moulton sand in 1937 and a discovery in a deeper horizon in 1938.

No. 1 Lungren was completed at 2,566 feet. It had the top of the Moulton sand at 2,500 feet with a good show of oil at 2,515-25 feet and then a medium coarse gray sandstone at 2,545-62 feet which swabbed and flowed 187 bbls. first 24 hours. The 7-inch was cemented at 2,544 feet and the well made 100 bbls. first 24 hours through the tubing and 1,200 bbls first 14 days. Elevation, 3,837 feet. Top of Colorado, 890 feet. This was the first oil producer in the Moulton sand in the Cut Bank area, although there is considerable gas production from that horizon.

The discovery in a deeper horizon was in A. B Cobb No. 1 State, C NE NE Section 30-37n-4w, in Glacier County, between the Border field on the Canadian boundary and the Cut Bank gas field and 2½ miles east of the No. 1 Lungren, oil discovery reported above. It was drilled to 2,595 feet in December, 1937, and gauged 8,000,000 cu. ft. per day from the upper Moulton sand at 2,572-85 feet. It was shut in until May, 1938, when it was deepened to 2,605 feet where it gauged 40,000,000 cu. ft., the increase coming from the second Moulton sand.

In April the Glacier Production Co. brought in its No. 1 McNamar Unit, CEL SE NE Section 15-36n-5w, half a mile northeast of a dry hole, for 17,000,000 cu. ft in the Moulton sand at 2,664 feet, total depth. This well and the No. 1 Lungren and No. 1 State indicate that a new oil and gas pool may have been opened instead of an extension of the Cut Bank field.

The field extended was the West Kevin pool midway between Kevin-Sunburst and Cut Bank fields. The discovery well in this pool was completed in October, 1937, in Pfabe & Engelking No. 1 Innerberg, NW SE SE Section 26-35n-4w, which flowed 100 bbls. of 38.4-gravity oil through the casing from the Ellis-Madison contact at 2,060-63 feet. It was acidized with 500 gallons. Three other small wells subsequently were completed on a northeast-southwest trend and the pool apparently was limited by dry holes three-fourths of a mile to the northeast, half a mile to the northwest and 1½ miles to the southeast of the discovery. However, in December, W. M. Cassidy No. 1 Phoenix, CNL NW NW Section 28-35n-4w, 2½ miles to the west and half a mile north of the discovery, came in as a producer in a lime break in the Madison at 2,318 feet, total depth. The contact was dry. An adequate test has not yet been made, due to subzero weather and mechanical difficulties. However, after setting the 5 $\frac{7}{8}$-inch at 2,285 feet and acidizing with 500 gallons, it made 76 bbls. of fluid in 12 hours, about 40 per cent water. It is a light green color of paraffin base and approximately 41.3 gravity, unlike the Kevin-Sunburst or Cut Bank crudes. Water with the oil is not unusual in the district. The oil rose 25 feet per day in the hole and the water came in only with acidization.

MONTANA

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Big Horn	2	0	0	2
Blaine	1	0	1	0
Fallon	2	0	0	2
Fergus	1	0	1	0
Glacier	40	3,081	4	6
Hill	1	0	1	0
Judith Basin	1	0	1	0
Petroleum	1	0	1	0
Pondera	2	0	2	0
Stillwater	1	0	1	0
Teton	1	0	1	0
Toole	53	2,240	13	3
Yellowstone	3	70	1	0
Total, 1938	109	5,391	27	13

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	3	150	2	0
February	3	70	1	0
March	7	380	2	2
April	5	159	0	1
May	15	716	5	1
June	8	213	2	0
July	11	716	0	2
August	15	828	1	3
September	14	526	4	1
October	11	688	3	2
November	8	580	2	1
December	9	365	5	0
Total, 1938	109	5,391	27	13
Total, 1937	217	12,810	56	26
Difference	108	7,419	29	13

UTAH

The Clay basin gas field in Daggett County, northeastern Utah, which was extended three-fourths of a mile south and 1¼ miles west with the completion of two wells in 1937, was extended a mile to the east in June, 1938, with the completion of the Mountain Fuel Supply Co. No. 3-D Murphy, NW NW SW Section 23-3n-24e. It topped the Dakota at 5,918 feet and was drilled to 6,036 feet where it was completed for 16,000,000 cu. ft. per day with a rock pressure of 2,100 pounds. There are now six wells on the structure of which five were completed in the Dakota and one in the Frontier. Tests drilled below the Dakota found nothing of value in the Sundance. Approximately 1,300 acres have been proven by development and the limits of the field have not yet been determined by the drill. The developed area is approximately 2½ miles east and west and 1½ miles southeast and northwest. The field is connected with the Mountain Fuel Supply Co.'s trunk line to Salt Lake City and Ogden.

UTAH

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Daggett	1	0	0	1
Grand	2	0	2	0
Summitt	1	0	1	0
Total, 1938	4	0	3	1

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January-May	0	0	0	0
June	2	0	1	1
July	0	0	0	0
August	1	0	1	0
Septembed-October	0	0	0	0
November	1	0	1	0
December	0	0	0	0
Total, 1938	4	0	3	1
Total, 1937	4	0	2	2
Difference	0	0	1	1

Annual Review

NEW DISCOVERIES IN OLD AREAS KEEP OKLAHOMANS BUSY IN 1938

By DAL DALRYMPLE

Greener fields proved more attractive than the home pastures to many Oklahoma operators in 1938, but those who remained behind and continued the search for petroleum beneath the surface of the Sooner commonwealth made a record of discovery and development that would be considered remarkable in some other oil states that have yet to find their Cushing, their Healdton, their Burbank, their Seminole, their Oklahoma City.

The discoveries included the comparatively small but highly productive Ramsey pool in Payne County; the Garfield County strike at Hillsdale, extending oil production to the northwest; Wilcox sand pools at Coyle, Meridian and Southeast Braman in Payne, Logan and Kay counties, respectively; and 26 other oil areas of more or less importance. Several gas fields also were opened, notably the big Panhandle area in Texas County.

Outstanding and overshadowing the wildcat discoveries, however, was the successful search for new oil in old places. The St. Louis district in Pottawatomie County had its big boom years ago, but during most of 1938 it was the busiest field in the state. Seminole had its heyday some 10 years ago, but persistent drillers found much new oil thereabouts in 1938. The Cement field was opened in Caddo County in 1916, but in 1938 a 10,000-bbl. well was completed in that old sector. Oil production was found under the Sac and Fox Indian reservation in Lincoln County 12 years ago, but the big development did not come until the past year. Okmulgee and Creek were among the early Oklahoma counties to be proven productive, and they rated fourth and fifth in total activity in 1938. Old oil fields, all of them, yet they continue to yield new production to many of those who seek it.

That record of discovery and new development was made in a year that saw total operations decline sharply, reflecting the exodus of operators to Illinois, K.M.A. and elsewhere and the resultant loss of market. Many major operators and independents alike found other pastures greener, and curtailed or concluded their activity entirely in Oklahoma.

Completions Total 1,654

Those who carried on completed a total of 1,654 wells in those counties for which records are available, plus an unascertained number of completions in the northeastern stripper districts of Nowata, Washington, Rogers and Craig counties. The completions included 123 gas wells and 545 dry holes, 986 being oil wells.

Seminole County led the state with 211 completions, but Pottawatomie County was second with 174 and was setting the pace as the year ended. Pontotoc County with 145 completions, Okmulgee with 137, Creek with 135, Osage with 87, Lincoln with 84 and Carter with 73 were the other more active counties.

The total was a decline of 1,018 from the 2,672 completions reported in 1937 and was less than the number in the three preceding years, but surpassed the completion records of 1931, 1932 and 1933.

The old Seminole-St. Louis district not only accounted for many of the producers completed in proven areas, but provided several of the wildcat strikes of the year. When the Greater Seminole boom was under way oil operators, in their hurry to find Wilcox sand production, overlooked or ignored productive sands found at shallower levels. In 1938 they drilled with more care and were content with smaller yields. As a result they completed many profitable producers in several pay zones designated variously as Boggy, Calvin, Gilcrease, Earlsboro, Senora, Thurman, Trenton, Viola, dolomite, etc., not named in order of depth. The drilling of new wells to the horizons above the Wilcox was but a part of the work in the proven fields. Many old Wilcox sand wells in which production had declined were plugged back, reconditioned and recompleted in the shallower formations; and quite a few wells that had stopped short of the deep pay in years gone by were deepened and recompleted as good Wilcox producers. The recompleted wells are not included in the total completions of the year. In addition to the new activity in the old fields, numerous wildcats were drilled throughout the district and several productive areas that were overlooked in Seminole boom days were found.

Activity at Cement

About 40 wells were completed at Cement in Caddo County—a right good record for a 22-year-old field. The major activity got under way there early in the year when the field was given a western extension with a 3,500-bbl. well, the largest completed in the area up to that time. That well opened a wide area to development and encouraged further exploration at both east and west ends of the field. Subsequent completions included some tremendous gassers, with production exceeding 100,000,000 cu. ft. daily in some, and several good oil producers. The record producer for the field was completed in October, when Ohio Oil Co. and Ramsey Petroleum Co. brought in No. 6 Lackey, SE SE NW Section 11-5n-9w, for 10,000 bbls. of oil daily from Rowe sand at 3,316-66 feet. Production at Cement is from many horizons, and a well frequently may find the pay in an entirely different zone from that of its offset. Because of the uncertain geology, operations are carried on more slowly and carefully than in more conservative pools. The Cement field, as yet undefined and with its many pay levels, undoubtedly will continue active for a long time. Townsite drilling was getting under way at the turn of the year.

The Sac and Fox pool in eastern Lincoln County, after a lapse of nearly 12 years, came into its own in 1938. Opened in January, 1925, by Wilcox Oil & Gas Co. at No. 1 Sac and Fox, SE SW SW Section 15-14-6, only three wells were completed at that time and it remained dormant during the next decade, due to time limit on leases. When the Government permitted the Sac and Fox lands to be leased for as long as oil is produced, the area became active. Upward of 50 wells

OKLAHOMA NEW DISCOVERIES IN 1938

Field and county—	Location	Operator—	Comp.	No. wells Dec. 31	Producing formation	Total depth, ft.	Initial potential, bbls.
Ramsey, Payne	18-18- 2e	Mid-Continent Petroleum Corp. and others	Jan.	17	Wilcox	4,795	13,344
Okfuskee, Okfuskee	10-13-10	Mid-Continent Petroleum Corp.	Feb.	4	Wilcox	3,431	125
West Konawa, Seminole	27- 6- 5	Hall-Troup & Moore	Feb.	1	Calvin	2,325	Gas well
Lehmer, Okfuskee	21-13-10	Broswood Oil Co.	March	1	Dutcher	2,866	38
McCann, Okmulgee	33-14-11	H. C. Detrick and others	March	..	Sand	2,590	Gas well
Bolby, Muskogee	22-13-19	H. H. Heydrick	March	..	Sand	690	Gas well
Waukomis, Garfield	34-21- 6w	Hollenback and others	April	1	Marshall	7,336	294
West Konawa, Seminole	34- 6- 5	C. E. Davis and others	April	9	Senora	2,314	120
Clark, Garvin	16-3n- 3e	B. C. D. Edwards	April	1	Pontotoc	2,676	15
Fream, Hughes	29- 9- 9	Amerada-Stanolind	April	2	{ Wapanucka } Cromwell	4,268	138
Panhandle, Texas	2-2n-14ecm	Hardendorf & Kuhn	May	..	Permian	2,725	Gas well
Panhandle, Texas	6-1n-13ecm	Hagy, Harrington & Marsh	May	..	Permian	2,893	Gas well
Hazel, Seminole	26- 7- 5	W. A. Villines and others	May	5	Thurman	3,001	135
Swan, Seminole	18- 6- 6	W. A. Delaney and others	May	1	Thurman	2,693	80
Wolfe, Murray	8-1n- 2e	Gilbreath & Dutton	June	1	Bromide	2,522	Gas well
South Hazel, Seminole	35- 7- 5	W. A. Villines and others	June	7	Boggy	3,005	185
West Konawa, Seminole	27- 6- 5	Grisso Royalty Co.	June	9	Boggy	2,714	242
East Hazel, Seminole	25- 7- 5	Greer and others	June	1	Thurman	3,014	25
North March, Payne	6-18- 5	R. L. Kemp and others	June	1	Bartlesville	3,705	Gas well
Coyle, Payne	12-17- 1e	Texas Co.	June	1	Wilcox	5,238	525
Noble, Cleveland	12- 7- 2w	W. A. Delaney and others	June	1	Wilcox	7,682	454
Meridian, Logan	27-16- 1e	Sinclair Prairie	June	2	{ Wilcox } Dolomite	5,238	1,080
Southeast Braman, Kay	16-28- 1w	Helmerich & Payne and others	July	4	Wilcox	3,645	1,320
Coline, Stephens	1-2n- 8w	Coline Oil Co.	July	1	Cisco	10,000	45
*Mathis, Seminole	7- 6- 6	Denver Producing & Refining Co.	July	1	Dolomite	3,842	35
Vanek, Oklahoma	4-12- 3w	Olson Oil Co.	Aug.	1	Wilcox	6,776	288
Avoca, Pottawatomie	6- 6- 4e	Atlantic Refining Co.	Aug.	1	Viola	4,208	368
West Little River, Seminole	17- 7- 6	Young & Newsom and others	Aug.	4	{ Wilcox } Dolomite	4,781	396
North Cromwell, Okfuskee	26-11- 8	C. W. Titus	Sept.	1	Cromwell	3,481	137
East Wetumka, Hughes	13- 9-10	Phillaine Oil Co.	Sept.	1	Wilcox	4,214	50
Hillsdale, Garfield	4-24- 8w	Champlin Refining Co.	Sept.	1	Wilcox	6,702	600
McGee, Beckham	25- 8-22w	Wagner-Stegner	Oct.	1	Sand	1,045	Gas well
Britton Ex., Oklahoma	21-13- 3w	Kerlyn Oil Co. and others	Oct.	1	Sand	6,702	189
Lease, Okfuskee	21-13-10	Lease Investment Co.	Nov.	1	Wilcox	3,613	70
Kay	33-28- 3e	Gus T. Little	Dec.	1	Sand	319	Gas well
Tyrola, Seminole	4- 5- 6	Arch Oil Co.	Dec.	1	Viola	3,270	480
Maud Ex., Pottawatomie	16- 8- 5	Morgan, Flynn, Cobb and others	Dec.	1	Hunton	4,270	830
Avoca (new zone), Pottawatomie	6- 6- 4	Atlantic Refining Co.	Dec.	1	Wilcox	4,516	745
Leverett, Creek	7-16-10	Midco Oil Corp.	Dec.	1	Bartlesville	2,354	35
North Bebee, Pontotoc	9- 5- 5	Farmers Mutual Corp.	Dec.	1	Hunton	3,234	38

*Now included in Grayson pool.

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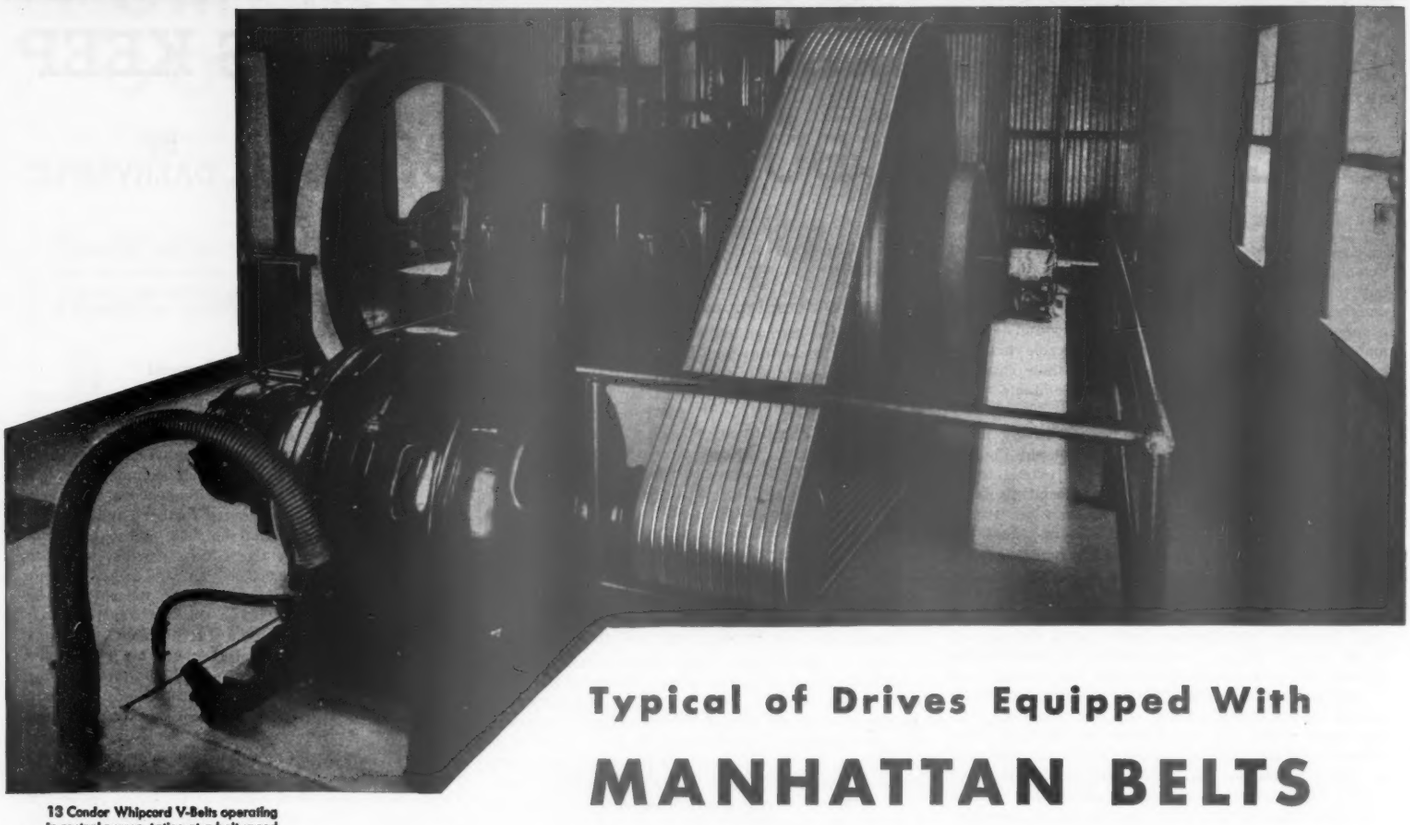

13 Condor Whipcord V-Belts operating in central power station at a belt speed of 4400 F.P.M. Flat belt driving circulating water pump is 4-inch, 4-ply Manhattan A.P.I.

Typical of Drives Equipped With

MANHATTAN BELTS

A lot depends on these 13 Condor Whipcord V-Belts . . . they transmit power in a central station generating current to pump many wells. This drive is no place for belts that slip, stretch or breakdown. Perhaps that's why the owner selected Condor Whipcord V-Belts. The unusual length of life, flexibility and freedom from stretch and slip, which characterizes Condor V-Belts, is the outcome of long and unremitting research.

This is but one of hundreds of important oil field drives where Manhattan Belts are depended on for efficient, economical power. On standard rigs and band wheel power drives, you'll find Manhattan A.P.I. Compensated—the rubber belt with equalized ply stresses. Its 12 advantages include freedom from ply rupture and separation and longer fastener life. For endless flat belt drives, there is Manhattan Endless Whipcord Belt. It has no splice in the tension or load-carrying section, has low inelastic stretch and high flexibility. Like Manhattan A.P.I. Compensated, it is unaffected by weather conditions.

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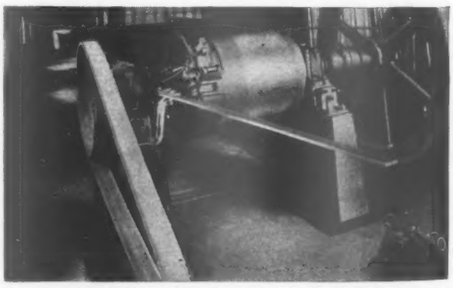

Manhattan A.P.I. Compensated Belt on Band Wheel Power and Gas Engine installation pumping 20 wells in Texas field. Belt is 26" wide, 7 ply, 184'8" long. Manhattan Clutch and Brake Lining and small belt on cooling water pump also shown. Sold through The National Supply Company.

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were drilled in the field the past year, with production from Prue sand at around 3,000 feet. The wells are not large, averaging around 100 bbls. daily initial production, but they are comparatively easy to drill and have long life. The field had not been entirely defined at the end of the year, and many more wells undoubtedly will be drilled there in 1939.

Reconditioning and recompleting old wells accounted for much of the activity in Okmulgee and Creek counties in 1938, resulting in the rejuvenation of many producers whose oil yield had declined to the vanishing point. This also is true of many wells in Osage, Muskogee, Wagoner and Tulsa counties. Numerous new wells also were drilled in those counties, all small producers, and several fields were extended or given new pay horizons. Some new productive spots were found in the Bristow field, Creek County.

Deep Development Slow

Development of deep sand production continued in the Fox field, Carter County, but necessarily was slow and tedious. Several comparatively large producers were completed, but the activity was ebbing at the turn of the year.

The dolomite zone at the north end of the Oklahoma City field experienced considerable activity in the first half of the year, but this declined as the months passed and few active operations were reported in December. Several sizeable producers in dolomite and other pay sands above the Wilcox were completed, but rapid decline in production and high cost of drilling caused some operators to lose interest. A few wells were drilled to shallow sands in the older part of the field to the south, and reworking and reconditioning old wells kept many drillers busy.

Water-flood projects were continued successfully in the Nowata-Chelsea field in northeastern Oklahoma. Several new projects were started, necessitating the drilling of many water and oil wells to fit into the flood patterns. This work undoubtedly will continue in 1939 and may be extended to other Oklahoma stripper areas.

The wildcatters drilled tests in 45 of the state's 77 counties, opening new oil areas in 15 counties and new gas fields in nine counties. Of the 179 outposts com-

OKLAHOMA

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
WASHINGTON COUNTY:													
Daily average	3,386	3,571	3,768	3,843	3,118	3,260	3,428	3,499	3,505	3,261	3,341	3,339	
Month	104,966	99,988	116,808	115,290	96,658	97,800	108,128	108,469	105,150	101,091	100,230	103,509	1,258,087
NOWATA COUNTY:													
Daily average	10,792	12,144	12,787	12,805	10,909	10,800	12,502	12,941	12,507	12,089	12,035	12,036	
Month	334,552	340,032	396,397	384,150	338,179	324,000	387,562	401,171	375,210	374,759	361,050	373,116	4,390,178
ROGERS COUNTY:													
Daily average	1,568	1,802	1,778	1,856	1,566	1,540	2,034	2,202	2,056	2,004	1,796	2,003	
Month	48,608	50,456	55,118	55,680	48,546	46,200	63,085	68,262	61,680	62,124	53,880	62,093	675,732
OSAGE AND EASTERN KAY COUNTIES:													
Burbank—													
Daily average	7,562	7,699	7,687	7,732	6,971	6,819	8,415	8,997	7,990	7,506	7,811	7,406	
Month	234,422	215,572	238,297	231,960	216,101	204,570	260,865	276,117	239,700	232,686	234,330	229,586	2,814,206
South Burbank—													
Daily average	13,822	11,735	11,525	11,226	10,664	9,606	10,559	10,459	10,459	10,332	10,016	9,102	
Month	428,482	328,580	357,275	336,780	330,584	288,180	327,329	324,229	313,770	320,292	300,480	282,162	3,938,143
Naval Reserve—													
Daily average	5,093	5,139	5,122	5,061	4,698	4,590	4,417	4,434	4,432	4,409	4,391	4,271	
Month	157,883	143,892	158,782	151,830	145,638	137,700	136,927	137,454	132,960	136,679	131,730	132,401	1,703,876
Other Osage fields—													
Daily average	13,426	13,902	14,073	13,748	11,535	12,735	14,233	13,204	14,119	11,549	11,585	11,645	
Month	416,206	289,256	436,263	412,440	357,585	382,050	441,223	409,324	423,570	358,019	347,550	360,995	4,734,511
TULSA COUNTY:													
Daily average	4,085	4,406	4,364	4,310	3,702	3,806	4,260	4,255	4,040	3,654	3,414	3,512	
Month	126,635	123,368	135,284	129,300	114,762	114,180	132,060	131,905	121,230	113,274	162,420	108,872	1,513,290
WAGONER COUNTY:													
Daily average	870	878	783	787	699	701	718	848	719	655	795	789	
Month	26,970	24,584	24,273	23,610	21,669	21,030	22,258	26,288	21,570	20,305	23,850	24,459	280,866
OKMULGEE COUNTY:													
Daily average	4,245	4,700	4,822	4,997	4,676	4,666	5,262	5,082	5,044	4,652	4,750	4,741	
Month	131,595	131,600	149,482	149,910	144,956	139,980	163,122	157,542	151,320	144,212	142,500	146,971	1,753,190
MUSKOGEE AND McINTOSH COUNTIES:													
Daily average	731	809	890	884	778	802	968	901	1,005	849	859	866	
Month	22,661	22,652	27,590	26,520	24,118	24,060	30,008	27,931	30,150	26,319	25,770	26,846	314,625
OKFUSKEE COUNTY (Miscellaneous):													
Daily average	2,416	2,399	2,372	2,362	2,353	2,312	2,441	2,462	2,267	2,253	2,119	2,211	
Month	74,896	67,172	73,532	70,860	72,943	69,360	75,671	76,322	68,010	69,843	63,570	68,541	850,720
Bowlegs—													
Daily average	10,231	9,880	9,532	8,824	8,430	8,156	7,877	9,341	9,274	8,356	7,472	7,888	
Month	317,161	276,640	295,492	264,720	261,330	244,680	244,187	289,571	278,220	259,036	224,160	244,528	3,199,725
SEMINOLE, POTTAWATOMIE, HUGHES AND PONTOTOC COUNTIES:													
Seminole City—													
Daily average	8,198	8,053	7,901	7,590	7,389	7,056	6,907	8,655	8,478	8,085	7,484	7,637	
Month	254,138	225,484	244,931	227,700	229,059	211,680	214,117	268,305	254,340	250,635	224,520	236,747	2,841,656
East Seminole—													
Daily average	1,576	1,655	1,543	1,631	1,536	1,475	1,632	1,748	1,661	1,615	1,522	1,510	
Month	48,856	46,340	47,833	48,930	47,616	44,250	50,592	54,188	49,830	50,065	45,660	46,810	580,970
West Seminole—													
Daily average	2,552	2,549	2,524	2,389	2,125	1,986	1,886	2,126	1,963	1,791	1,612	1,616	
Month	79,112	71,372	78,244	71,670	65,875	59,580	58,466	65,906	58,890	55,521	48,360	50,096	763,092
Earlsboro, East, South and North Earlsboro—													
Daily average	12,179	11,121	11,246	10,395	9,536	8,689	9,925	11,083	10,660	10,107	9,499	8,907	
Month	377,549	311,388	348,626	311,850	295,616	260,670	307,675	343,573	319,800	313,317	248,970	276,117	3,751,151
Little River and East Little River—													
Daily average	10,086	9,395	9,267	8,811	8,069	7,687	7,342	8,599	8,904	7,702	7,103	7,069	
Month	312,666	263,060	287,277	264,330	250,139	230,610	227,602	266,569	267,120	238,762	213,090	219,139	3,040,364
Searight and North Searight—													
Daily average	3,586	3,532	3,294	2,771	2,909	2,763	2,965	2,987	2,911	2,592	2,350	2,413	
Month	111,166	98,896	102,114	83,130	90,179	82,890	91,915	92,597	87,330	80,352	70,500	74,803	1,065,872
Mission—													
Daily average	1,823	1,902	1,694	1,575	1,464	1,402	1,350	1,590	1,613	1,359	1,344	1,307	
Month	56,513	53,256	52,514	47,250	45,384	42,060	41,850	49,290	48,390	42,129	40,320	40,517	559,473
Carr City—													
Daily average	4,390	4,227	4,034	3,342	3,510	3,463	3,492	3,523	3,466	3,235	2,861	3,031	
Month	136,090	118,356	125,054	100,260	108,810	103,890	108,252	109,213	103,980	100,285	85,830	93,961	1,293,981
Maud—													
Daily average	620	621	606	632	580	594	603	699	680	587	835	611	
Month	19,220	17,388	18,786	18,960	17,980	17,820	18,693	21,669	20,400	18,197	25,050	18,941	233,104
Total Seminole field—													
Daily average	55,241	52,935	51,641	47,960	45,548	43,271	43,979	50,351	49,610	45,429	42,082	41,989	
Month	1,712,471	1,482,180	1,600,871	1,438,800	1,411,988	1,298,130	1,363,349	1,560,881	1,488,300	1,408,299	1,262,460	1,301,659	17,329,388
Asher and West Asher—													
Daily average	494	506	323	462	438	442	418	433	472	397	424	417	
Month	15,314	14,168	10,013	13,860	13,578	13,260	12,958	13,423	14,160	12,307	12,720	12,927	158,688
Allen district—													
Daily average	6,880	7,077	7,098	6,996	7,026	6,708	6,423	6,599	6,695	6,780	6,698	6,431	
Month	213,280	198,156	220,038	209,880	217,806	201,240	199,113	204,569	200,850	210,180	200,940	199,361	2,475,413
Beebe and East Beebe—													
Daily average	2,442	2,556	2,625	2,548	2,485	2,380	3,318	3,092	3,196	2,997	2,872	2,902	
Month	75,702	71,568	81,375	76,440	77,035	71,400	102,858	95,852	95,880	92,907	86,160	89,962	1,017,139
Bethel and North Bethel—													
Daily average	2,655	2,318	2,278	2,281	2,008	1,989	1,882	2,070	2,093	2,087	2,053	2,062	
Month	82,305	64,904	70,618	68,430	62,248	59,670	58,342	64,170	62,790	64,697	61,590	63,922	783,686
Conservation—													
Daily average	87	124	108	103	97	96	108	75	87	87	88	88	
Month	2,697	3,472	3,348	3,090	3,007	2,880	3,348	2,325	2,610	2,697	2,640	2,728	34,842
Cromwell, South and North Cromwell—													
Daily average	3,452	3,257	3,309	3,255	3,331	2,944	3,806	3,889	3,762	3,772	3,816	3,702	
Month	107,012	91,196	102,579	97,650	103,261	88,320	117,986	120,559	112,860	116,932	114,480	114,762	1,287,597
Dill—													
Daily average	1,411	1,287	1,213	1,151	946	918	873	1,028	1,185	1,064	1,133	1,110	
Month	43,741	36,036	37,603	34,530	29,326	27,540	27,063	31,868	35,550	32,984	33,990	34,410	404,641
Fish—													
Daily average	4,095	4,048	3,694	3,414	3,340	3,169	2,822	3,317	3,161	3,182	2,935	3,106	
Month	126,945	113,344	114,514	102,420	103,540	95,070	87,482	102,827	94,830	98,642	88,050	96,286	1,223,950
Fitts—													
Daily average	65,352	60,924	58,348	52,105	42,639	40,988	39,782	39,462	38,984	38,096	36,691	35,326	
Month	2,025,912	1,705,872	1,808,788	1,563,150	1,321,809	1,229,640	1,233,242	1,223,322	1,166,820	1,180,976	1,100,730	1,095,106	16,655,367
Gray—													
Daily average	1,149	1,066	961	1,019	956	913	919	927	857	887	851	863	
Month	35,619	29,848	29,791	30,570	29,636	27,390	28,489	28,737	25,710	27,497	25,530	26,753	345,570
Grisso—													
Daily average	107	93	94	93	89	84	88	86	89	76	84	89	
Month	3,317	2,604	2,914	2,790	2,759	2,520	2,728	2,666	2,670	2,356	2,520	2,759	32,603
Holdenville—													
Daily average	831	934	929	921	833	827	1,016	878	873	824	853	862	
Month	25,761	26,152	28,799	27,630	25,823	24,810	31,496	27,218	26,190	25,544	25,590	26,722	321,735

(Continued on Next Page)

pleted, 33 found oil production and 14 found gas only. Some of the oil discoveries extended old areas, and others that originally were listed as opening new pools eventually were found to be connected with older fields.

The outstanding strike of the year was the first wildcat completion of the year, the Mid-Continent Petroleum Corp. and others No. 1 Ramsey, which opened the Ramsey pool in Section 18-18-2e, Payne County, early in January. It made initial potential of 13,344 bbls. of 43.2-gravity oil in 24 hours from Wilcox sand at total depth of 4,795 feet.

Ramsey Potential Soars

By the end of December 17 wells had been completed on the community block at Ramsey, the initial potentials ranging from 5,700 bbls. of oil daily at the smallest producer to 15,240 bbls. daily at the largest. The total potential of the 17 wells at the year-end was 173,979 bbls. The pool was developed in systematic manner by the community operators and, aside from a little flurry of lease and royalty trading and wildcatting in the immediate vicinity soon after the discovery well was brought in, there has been little of the boom atmosphere around Ramsey. The pool has been defined on the north, south and west sides, but the eastern limits remain to be determined. At the year-end three wells were being drilled on the community block in the W half of Section 13-18-1e and the E half of Section 18-18-2e, and one well was going down one location east of the block. Four dry holes, three within one-half mile of the discovery well, have been drilled on the south and west sides since the area became active.

The richness of the small Ramsey pool stands out in comparison with the vast Illinois basin field. Daily production in the new pools of the Illinois field in the final week of the year was 122,487 bbls., with an additional 10,715 bbls. coming from the old Illinois pools, and a majority of the Illinois wells were being produced to capacity. Thus the Illinois production in the last week of December totaled 133,202 bbls., compared with the daily potential of 173,979 bbls. at Ramsey. The joker is in the fact that Ramsey wells are held to a daily yield of 150 bbls. per well. And, of course, the

OKLAHOMA (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
Jesse—													
Daily average	4,421	3,661	3,602	3,282	2,797	2,556	2,423	2,227	2,318	2,358	2,339	2,319	
Month	137,051	102,508	111,662	98,460	86,707	76,680	75,113	69,037	69,540	73,098	70,170	71,889	1,041,915
Keokuk—													
Daily average	7,634	6,625	5,256	4,463	4,490	3,957	4,126	4,103	4,104	3,943	3,862	3,863	
Month	236,654	185,500	162,936	133,890	139,190	118,710	127,906	127,193	123,120	122,233	115,860	119,753	1,712,945
Dora—													
Daily average	2,860	4,390	5,906	5,039	5,260	4,713	4,387	5,047	5,218	4,712	4,834	4,581	
Month	88,660	122,920	183,086	151,170	163,060	141,390	135,997	156,457	156,540	146,072	145,020	142,011	1,732,383
Steedman (North)—													
Daily average	292	314	312	309	276	272	278	378	267	267	272	279	
Month	9,052	8,792	9,672	9,270	8,556	8,160	8,618	11,718	8,010	8,277	8,160	8,649	106,934
Konawa, East and West Konawa—													
Daily average	1,282	1,399	1,402	1,407	1,282	1,253	1,399	1,848	1,627	1,894	1,976	1,916	
Month	39,742	39,172	43,462	42,210	39,742	37,590	43,369	57,288	48,810	58,714	59,280	59,396	568,775
Olympic—													
Daily average	7,062	6,629	6,126	5,824	5,343	5,331	4,814	4,799	4,532	4,055	3,824	3,862	
Month	218,922	185,612	189,906	174,720	165,633	159,930	149,234	148,769	135,960	125,705	114,720	119,722	1,888,833
Shawnee—													
Daily average	2,624	1,576	1,206	1,158	1,055	1,057	1,027	1,174	1,132	1,154	1,076	1,069	
Month	81,344	44,128	37,386	34,740	32,705	31,710	31,837	36,394	33,960	35,774	32,280	33,139	465,397
St. Louis-Pearson—													
Daily average	18,002	17,607	18,558	19,438	19,467	18,938	19,476	23,586	24,408	25,916	24,090	25,875	
Month	558,062	492,996	575,298	583,140	603,477	568,140	603,756	731,166	732,240	803,396	722,700	802,125	7,766,496
Sasakwa—													
Daily average	1,677	1,565	1,538	1,498	1,319	1,369	1,307	1,437	1,384	1,306	1,321	1,352	
Month	51,987	43,820	47,678	44,940	40,889	41,070	40,517	44,547	41,520	40,486	39,630	41,912	518,996
Sasakwa Townsite—													
Daily average	569	482	513	485	419	407	358	461	459	359	338	343	
Month	17,639	13,496	15,903	14,550	12,989	12,210	11,098	14,291	13,770	11,129	10,140	10,633	157,848
Papoose-Gilcrease-Fuhrman—													
Daily average	798	805	811	801	705	732	786	865	792	769	749	751	
Month	24,738	22,540	25,141	24,030	21,855	21,960	24,366	26,815	23,760	23,839	22,470	23,281	284,795
Wofford—													
Daily average	385	380	379	381	347	352	349	338	321	291	302	298	
Month	11,935	10,640	11,749	11,430	10,757	10,560	10,819	10,478	9,630	9,021	9,060	9,238	125,317
Wetley—													
Daily average	304	277	288	281	208	211	188	179	174	154	140	143	
Month	9,424	7,756	8,928	8,430	6,448	6,330	5,828	5,549	5,220	4,774	4,200	4,433	77,320
Wewoka district—													
Daily average	2,757	2,482	2,566	2,610	2,187	2,149	2,206	2,137	2,258	2,237	2,095	2,210	
Month	85,467	69,496	79,546	78,300	67,797	64,470	68,386	66,247	67,740	69,347	62,850	68,510	848,156
Grayson—													
Daily average	397	406	338	325	305	307	283	323	328	265	263	274	
Month	12,307	11,368	10,478	9,750	9,455	9,210	8,773	10,013	9,840	8,215	7,890	8,494	115,793
Traugh—													
Daily average	990	1,395	1,349	1,571	1,858	1,852	1,556	1,753	1,717	1,681	1,409	1,510	
Month	30,690	39,060	41,819	47,130	57,598	55,560	48,236	54,343	51,510	52,111	42,270	48,670	568,997
Adams—													
Daily average	856	796	791	802	556	540	577	657	830	799	797	790	
Month	26,536	22,288	24,521	24,060	17,236	16,200	17,887	20,367	24,900	24,769	23,910	24,490	267,164
Hazel, East Hazel, South Hazel—													
Daily average	.....	.....	.....	.....	.....	.....	370	466	669	449	442	446	
Month	.....	.....	.....	.....	.....	.....	11,470	14,446	20,070	13,919	13,260	13,826	86,991
Avoca—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	388	108	98	113	
Month	.....	.....	.....	.....	.....	.....	.....	.....	11,640	3,348	2,940	3,503	21,431
Miscellaneous—													
Daily average	709	523	647	644	1,047	903	1,029	1,060	599	601	778	746	
Month	21,979	14,644	20,057	19,320	32,457	27,090	31,899	32,860	17,970	18,631	23,340	23,126	283,373
CREEK COUNTY—													
Glen Pool, Sapulpa and Bowden—													
Daily average	3,973	3,603	3,816	3,819	3,921	3,887	4,512	4,514	4,355	4,120	4,157	4,193	
Month	123,163	100,884	118,296	114,570	121,551	116,610	139,872	139,934	130,650	127,720	124,710	129,983	1,487,943
Cushing-Shamrock—													
Daily average	10,476	10,800	11,201	10,919	9,895	9,814	11,064	10,877	10,512	10,425	10,408	10,476	
Month	324,756	302,400	336,040	327,570	306,745	294,420	342,984	337,187	315,360	323,175	312,240	324,756	3,847,633
Bristow district—													
Daily average	6,277	6,951	6,910	6,906	6,246	6,370	6,977	6,496	6,497	6,171	6,484	6,300	
Month	194,587	194,628	214,210	207,180	193,626	191,100	216,287	201,376	194,910	191,301	194,520	195,300	2,389,025
Manford and Olive—													
Daily average	2,341	1,967	2,511	2,649	2,270	2,283	2,029	2,162	2,032	1,979	2,007	1,990	
Month	72,571	55,076	77,841	79,470	70,370	68,490	62,899	67,022	60,960	61,349	60,210	61,690	797,948
Mounds, Independence, Wilcox and Miscellaneous—													
Daily average	1,040	991	983	981	810	802	1,480	1,426	1,321	1,416	1,237	1,211	
Month	32,240	27,748	30,473	29,430	25,110	24,060	45,880	44,206	39,630	43,896	37,110	37,541	417,324
PAWNEE AND PAYNE COUNTIES:													
Yale district, Maramec and Jennings—													
Daily average	3,916	3,778	3,830	3,827	3,323	3,494	3,877	3,476	3,413	3,462	3,379	3,366	
Month	121,396	105,784	118,730	114,810	103,013	104,820	120,187	107,756	102,390	107,322	101,370	104,346	1,311,924
Ramsey—													
Daily average	470	797	840	892	1,008	1,156	1,622	1,547	2,008	2,298	2,504	2,182	
Month	14,570	22,316	26,040	26,760	31,248	34,680	50,282	47,957	60,240	71,238	75,120	67,642	528,093
Ripley and Mehan—													
Daily average	296	244	273	269	205	202	178	207	214	106	99	101	
Month	9,176	6,832	8,463	8,070	6,355	6,060	5,518	6,417	6,420	3,286	2,970	3,131	72,698
Watchorn—													
Daily average	364	366	361	359	372	366	349	330	312	323	314	310	
Month	11,284	10,248	11,191	10,770	11,532	10,980	10,819	10,230	9,360	10,013	9,420	9,610	125,457
Cleveland and Keystone—													
Daily average	907	986	979	981	948	942	988	997	972	931	1,002	993	
Month	28,117	27,608	30,349	29,430	29,388	28,260	30,628	30,907	29,160	28,861	30,060	30,783	353,551
Stillwater—													
Daily average	151	145	147	144	168	153	142	153	161	132	138	130	
Month	4,681	4,060	4,557	4,320	5,208	4,590	4,402	4,743	4,830	4,092	4,140	4,030	53,653
Lauderdale—													
Daily average	952	1,022	1,012	996	872	877	871	961	917	885	914	897	
Month	29,512	28,616	31,372	29,880	27,032	26,310	27,001	29,791	27,510	27,435	27,420	27,807	339,686
Miscellaneous—													
Daily average	278	274	281	293	293	289	282	303	291	288	291	292	
Month	8,618	7,672	8,711	8,790	9,083	8,670	8,742	9,393	8,730	8,928	8,730	9,052	105,119
Orlando—													
Daily average	153	141	147	144	135	134	164	143	148	117	146	143	
Month	4,743	3,948	4,557	4,320	4,185	4,020	5,084	4,433	4,440	3,627	4,380	4,433	52,170
Norfolk and West Norfolk:													
Daily average	.....	.....	.....	.....	.....	.....	603	525	468	447	464	466	
Month	.....	.....	.....	.....	.....	.....	18,693	16,275	14,040	13,857	13,920	14,446	91,231

(Continued on Page 136)

Illinois potential exceeds its daily production, a current estimate of one of the major operators placing that state's potential at 250,000 bbls. daily. Even so, that figure represents the potential of more than 2,000 wells in the new fields of Illinois—while Ramsey's 173,979 bbls. is for 17 wells.

Three Wilcox sand pools were opened in June, one about 5 miles south of Ramsey, one about 20 miles southwest of Ramsey, and the other far to the south in Cleveland County.

The Texas Co. opened the Coyle pool, nearest to Ramsey, in Section 12-17-1e, Payne County, with a 525-bbl. producer, at total depth of 5,238 feet in Wilcox sand. Only the one producer had been completed there by the end of December, and one dry hole had been drilled, but the area probably will see considerable development when conditions justify.

OKLAHOMA

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Adair	2	0	2	0
Atoka	4	0	4	0
Beckham	6	0	4	2
Caddo	43	13,766	3	14
Carter	73	9,830	14	1
Choctaw	1	0	1	0
Cleveland	5	1,539	2	0
Cimarron	1	0	1	0
Coal	8	4,075	3	2
Comanche	16	27	9	0
Cotton	3	0	2	1
Creek	135	4,315	54	9
Garfield	10	349	4	1
Garvin	14	776	4	0
Grady	16	598	4	0
Grant	4	434	3	0
Greer	3	0	3	0
Haskell	3	0	0	3
Hughes	29	660	17	4
Jackson	5	481	0	0
Jefferson	30	352	12	0
Johnston	2	0	2	0
Kay	19	2,561	11	2
Kiowa	9	3	8	0
Latimer	5	0	1	4
Lincoln	84	8,154	14	3
Logan	12	470	9	1
Love	1	0	1	0
Marshall	4	8	3	0
Mayes	1	0	1	0
McClain	1	0	1	0
McIntosh	2	0	2	0
Murray	1	0	0	1
Muskogee	40	135	17	12
Noble	19	5,828	7	0
Okfuskee	51	1,341	27	2
Oklahoma	55	31,525	6	4
Okmulgee	137	1,342	58	9
Osage	87	2,850	36	6
Pawnee	27	588	12	2
Payne	30	23,612	10	0
Pittsburg	5	0	2	3
Pontotoc	145	23,642	38	12
Pottawatomie	174	36,876	37	3
Seminole	211	33,883	57	3
Stephens	64	2,066	17	7
Texas	8	0	0	8
Tillman	14	2,481	7	0
Tulsa	24	146	10	4
Wagoner	11	265	5	0
Total 1938	1,654	214,978	545	123

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	135	19,377	46	13
February	129	18,657	36	12
March	144	18,925	48	12
April	130	22,628	37	9
May	146	21,432	43	10
June	187	16,635	66	8
July	133	15,216	61	7
August	109	12,023	38	11
September	175	21,513	55	9
October	110	17,780	40	9
November	106	11,001	29	7
December	150	19,791	46	16
Total 1938	1,654	214,978	545	123
Total 1937	2,672	677,156	697	123
Difference	1,018	462,178	152	0
Total 1936	2,565	1,264,939	649	126
Total 1935	2,010	1,154,182	579	110
Total 1934	1,717	673,875	465	91
Total 1933	1,093	307,323	353	72
Total 1932	1,130	647,316	381	106
Total 1931	1,058	1,941,805	374	186
Total 1930	3,466	5,628,234	1,002	403

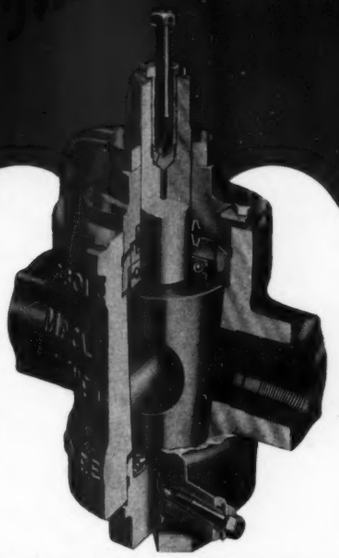
A Strike in Logan

Sinclair Prairie Oil Co. opened the Meridian pool in Section 27-16-1e, Logan County, with a 1,080-bbl. producer from dolomite and Wilcox sand at 5,238 feet, total depth. A second producer had been completed.

The third Wilcox discovery in June was at the W. A. Delaney and others No. 1 Bugher, Section 12-7-2w, opening the Noble pool in Cleveland County. It had initial daily yield of 454 bbls. of oil, with much water, at total depth of 7,682 feet. No other producer has been completed, and a wildcat 1 mile north of the discovery was dry and abandoned as the year ended.

A discovery of considerable importance was recorded in July, when Helmerich & Payne, Inc., and the Ohio Oil Co. opened the Southeast Braman pool in Section 16-28-1w, Kay County. The discovery well

STANDARDIZE ON "HYDRO-SEALS"



Metal, rubber, leather and fabric packing are entirely eliminated in the new MacClatchie "Hydro-Seal." Notice how body, stem, and top and bottom threads are completely sealed by channels of compressed *plastic* packing. All lubricating and packing chambers are guarded by "Lubrichecks."

The new MacClatchie Plastic Packed "Hydro-Seal" Plug Valves, by practically eliminating all packing and lubrication troubles, bring you greater ease of operation and lower maintenance costs on *all types* of hook-ups.

These valves have no metal, rubber, leather or fabric packing of any kind to cause leaks or require periodic shutdowns for replacing packing. Instead, they are *completely sealed at all points* with a revolutionary new fibrous plastic packing *that can be tightened or even completely replaced under high pressure without shutting in or by-passing.* This special packing, which does not contact the fluid in the line, is made to resist acids, gases, petroleum products, etc., and withstands 500° of heat!

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All packing and lubrication chambers on the new "Hydro-Seal" are "Lubricheck" equipped. This assures positive closing of grease channels and eliminates pressure "blow-backs" while repacking and regreasing.

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MacClatchie "Hydro-Seals" are adaptable to all high and low pressure hook-ups. They are made in a wide range of sizes, metals, and working pressures for all requirements, and are available with full openings to permit pulling tubing or running small tools and swabs. They are also available with the conventional type opening.

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MACCLATCHIE MANUFACTURING CO.

made initial potential of 1,320 bbls. of oil at total depth of 3,645 feet in Wilcox sand, and three other sizeable producers have been completed. Both Southeast Braman and Meridian will likely see considerable activity before they are defined, and there are those who believe rich production will yet be found in the Noble area if trouble with water can be overcome.

Wilcox sand pools also were opened in Section 10-13-10, Okfuskee County; Section 4-12-3w, between Oklahoma City and Britton in Oklahoma County; in the West Little River area, Section 17-7-6, Seminole County, and at East Wetumka, Section 13-9-10, Hughes County.

Two Wilcox sand strikes of considerable significance were completed near the end of the year. One of these was in the Avoca pool, which had been opened along the south side of the St. Louis district last summer, by Atlantic Refining Co. in Section 6-6-4e, Pottawatomie County, with a 368-bbl. Viola lime well. In December, the Atlantic company completed a 745-bbl. Wilcox sand well in the same section. These Viola-Wilcox strikes opened a considerable area to development between the St. Louis and Asher districts.

Extends Production Northwest

The other Wilcox discovery was made by Champlin Refining Co. at No. 1 Boehm, in Section 4-24-8w, opening the Hillsdale pool in northwestern Garfield County. It was completed at 6,702 feet, total depth, in Wilcox sand for initial potential of 600 bbls. of oil. Two offset wells were near completion by the end of December. This is the farthest west oil production in Oklahoma in the north part of the state, and opens a large area to future exploration. The strike at Hillsdale was followed by an extensive lease play in Garfield, Grant, Alfalfa, Major and other northwestern counties.

Numerous other oil strikes of more or less importance and in various productive horizons had initial potentials ranging from 15 bbls. to 830 bbls. daily.

RESULTS OF WILDCAT DRILLING

County—	Oil and gas wells	Dry holes	Average depth of dry holes
Adair	0	2	566
Atoka	0	2	4,167
Beckham	1 (gas)	1	2,764
Bryan	0	1	5,003
Caddo	0	1	6,900
Carter	0	2	938
Choctaw	0	1	815
Cimarron	0	1	5,502
Cleveland	1	2	7,385
Coal	1	1	7,374
Comanche	0	3	1,111
Cotton	0	2	1,303
Creek	1	3	3,194
Ellis	0	1	694
Garfield	2	2	4,023
Garvin	1	1	3,205
Grady	0	2	7,208
Grant	0	1	6,236
Greer	0	2	940
Hughes	2	6	3,421
Jefferson	0	1	4,528
Johnston	0	2	2,279
Kay	2 (1 gas)	5	3,099
Kiowa	0	6	1,392
Lincoln	0	7	4,413
Logan	1	4	4,986
Love	0	1	8,185
Marshall	0	1	2,022
McClain	0	1	3,006
Murray	1 (gas)	0	0
Muskogee	1 (gas)	2	2,271
Noble	0	3	5,260
Okfuskee	4	4	4,079
Oklahoma	1	2	6,876
Okmulgee	1 (gas)	2	3,549
Osage	1 (gas)	5	2,878
Pawnee	0	2	3,769
Payne	2	6	5,139
Pittsburg	1 (gas)	0	0
Pontotoc	1	7	2,770
Pottawatomie	4	8	4,506
Seminole	11 (1 gas)	15	3,592
Stephens	1	5	4,108
Texas	6 (6 gas)	0	0
Tillman	0	6	3,575
Total	47	132	

Average depth of oil and gas wells, feet	3,606
Average depth of dry holes, feet	3,686
Percentage of oil wells	18.44
Percentage of gas wells	7.82
Percentage of dry holes	73.74

Six wildcats completed in Texas County, in the Oklahoma Panhandle, proved a large area for gas production, the initial daily yield of these wells ranging

OKLAHOMA (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
OKLAHOMA COUNTY:													
Oklahoma City—													
Daily average	126,541	113,917	117,446	119,617	105,124	97,156	105,803	107,618	98,334	95,220	93,915	95,010	
Month	3,922,771	3,189,676	3,640,826	3,588,510	3,258,844	2,914,680	3,279,893	3,336,158	2,950,020	2,951,820	2,817,450	2,945,310	38,795,958
Edmond—													
Daily average	6,872	8,041	7,228	5,952	4,552	5,156	4,629	5,009	4,968	4,859	4,752	4,925	
Month	213,032	225,148	224,068	178,560	141,112	154,680	143,499	155,279	149,040	150,629	142,560	152,675	2,030,282
Britton—													
Daily average	871	1,159	980	868	721	732	743	798	732	727	837	811	
Month	27,001	32,452	30,380	26,040	22,351	21,960	23,033	24,738	21,960	22,537	25,110	25,141	302,703
Vanek—													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	190	186	
Month	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,700	5,766	11,466
LINCOLN COUNTY—													
Sac and Fox—													
Daily average	712	882	956	866	1,188	1,192	1,738	2,145	2,507	2,506	2,645	2,632	
Month	22,072	24,696	29,636	25,980	36,828	35,760	53,878	66,495	75,210	77,686	79,350	81,592	609,183
Peck—													
Daily average	164	212	193	242	177	169	220	186	179	165	154	151	
Month	5,084	5,936	5,983	7,260	5,487	5,070	6,820	5,766	5,370	5,115	4,620	4,681	67,192
Chandler and Hoyt—													
Daily average	2,442	2,409	2,307	2,166	1,827	1,837	1,913	2,063	2,072	1,961	1,922	1,918	
Month	75,702	67,452	71,517	64,980	56,637	55,110	59,303	63,953	62,160	60,791	57,660	59,458	754,723
Stroud and Kellyville—													
Daily average	419	460	457	407	410	406	444	449	437	484	423	430	
Month	12,989	12,880	14,167	12,210	12,710	12,180	13,764	13,919	13,110	15,004	12,690	13,330	158,953
Gessman—													
Daily average	78	72	79	80	81	81	88	83	68	78	68	66	
Month	2,418	2,016	2,449	2,400	2,511	2,430	2,728	2,573	2,040	2,418	2,040	2,046	28,069
Wilzetta—													
Daily average	387	398	324	269	326	311	339	357	433	349	382	374	
Month	11,997	11,144	10,044	8,070	10,106	9,330	10,509	11,067	12,990	10,819	11,460	11,594	129,130
Lafoon—													
Daily average	690	683	799	599	537	535	665	648	597	565	552	552	
Month	21,390	19,124	24,769	17,970	16,647	16,050	20,615	20,088	17,910	17,515	16,560	17,112	225,750
Sporn—													
Daily average	617	543	573	607	543	539	498	507	326	475	433	431	
Month	19,127	15,204	17,763	18,210	16,833	16,170	15,438	15,717	9,780	14,725	12,990	13,361	185,318
Wellston, North—													
Daily average	1,897	1,819	1,886	1,783	1,720	1,717	1,428	1,491	1,558	1,237	919	925	
Month	58,807	50,932	58,466	53,490	53,320	51,510	44,268	46,221	46,740	38,347	27,510	28,675	558,346
Miscellaneous—													
Daily average	122	121	126	133	178	166	216	165	160	140	157	148	
Month	3,782	3,388	3,906	3,990	5,518	4,980	6,696	5,115	4,800	4,340	4,710	4,588	55,813
Davenport—													
Daily average	650	550	526	552	493	501	570	548	511	500	533	528	
Month	20,150	15,400	16,306	16,560	15,283	15,030	17,670	16,988	15,330	15,500	15,990	16,368	196,575
STEPHENS AND COTTON COUNTIES:													
Duncan district—													
Daily average	1,836	2,088	2,013	2,197	2,210	2,190	2,286	2,785	2,630	2,679	2,625	2,649	
Month	56,916	58,464	62,403	65,910	68,510	65,700	70,866	86,335	78,900	83,049	78,750	82,119	857,922
Loco-Milroy—													
Daily average	1,106	1,093	1,081	965	899	896	870	753	720	737	664	697	
Month	34,286	30,604	33,511	28,950	27,869	26,880	26,970	23,343	21,600	22,847	19,920	21,607	318,387
Velma—													
Daily average	688	771	807	780	683	704	795	909	790	714	647	702	
Month	21,328	21,588	25,017	23,400	21,173	21,120	24,645	28,179	23,700	22,134	19,410	21,762	273,456
Walters—													
Daily average	1,077	985	1,048	952	1,013	994	1,010	944	1,050	1,028	1,022	1,019	
Month	33,387	27,580	32,488	28,560	31,403	29,820	31,310	29,264	31,500	31,868	30,660	31,589	369,429
Comanche—													
Daily average	660	691	719	624	610	613	670	737	624	642	662	649	
Month	20,460	19,348	22,289	18,720	18,910	18,390	20,770	22,847	18,720	19,902	19,860	20,119	240,335
Miscellaneous—													
Daily average	309	311	331	314	298	289	172	176	147	137	162	159	
Month	9,579	8,708	10,261	9,420	9,238	8,670	5,332	5,456	4,410	4,247	4,860	4,929	85,110
JEFFERSON COUNTY:													
Daily average	3,416	3,353	3,059	3,046	2,768	2,793	2,590	1,275	1,293	1,263	1,204	1,242	
Month	105,896	93,884	94,829	91,380	85,808	83,790	80,290	39,525	38,790	39,153	36,120	38,502	827,967
GARVIN COUNTY—													
Daily average	1,118	1,103	1,109	1,082	1,089	990	1,691	1,504	1,690	1,396	1,318	1,378	
Month	34,658	30,884	34,379	32,460	33,759	29,700	52,421	46,624	50,700	43,276	39,540	42,718	471,119
GRADY COUNTY—													
Daily average	1,451	1,587	1,638	1,491	1,671	1,615	1,771	1,861	1,750	1,674	1,795	1,716	
Month	44,981	44,436	50,778	44,730	51,801	48,450	54,901	57,691	52,500	51,894	53,850	53,196	609,208
MARSHALL COUNTY—													
Daily average	156	186	187	182	178	177	141	161	184	112	90	101	
Month	4,836	5,208	5,797	5,460	5,518	5,310	4,371	4,991	5,520	3,472	2,700	3,131	56,314
CADDO COUNTY—													
Daily average	3,635	3,818	3,774	3,373	3,082	3,062	2,978	3,147	3,657	4,052	4,652	4,716	
Month	112,685	106,904	116,994	101,190	95,542	91,860	92,318	97,557	109,710	125,612	139,560	146,196	1,336,128
TILLMAN COUNTY—													
Daily average	998	1,072	1,029	978	712	713	1,296	1,361	1,396	1,389	1,410	1,411	
Month	30,938	30,016	31,899	29,340	22,072	21,390	40,176	42,191	41,880	43,059	42,300	43,741	419,002
COMANCHE COUNTY—													
Daily average	8	7	5	.....	6	.....	.....	.....	9	7	6	5	
Month	248	196	155	.....	186	.....	.....	.....	270	217	180	155	1,607
JACKSON COUNTY:													
Daily average	1,037	988	987	940	778	766	987	886	1,021	987	969	978	
Month	32,147	27,664	30,597	28,200	24,118	22,980	30,597	27,466	30,630	30,597	29,070	30,318	344,384

(Continued on Next Page)

from 3,000,000 cu. ft. to 37,500,000 cu. ft. This development proved the extension of the Hugoton gas field of southwestern Kansas into Oklahoma, and indicated that the Hugoton area eventually may tie in with the Panhandle gas field in Texas.

A gas pool was opened by Gilbreath & Dutton in Section 8-1n-2e, Murray County, in June. Oil began showing with the gas late in the year, giving promise that Murray County may gain its first oil field this year.

Several important wildcat tests were being drilled when the new year opened, and several others were expected to start within a few weeks, giving promise of a considerable exploration campaign in 1939. One of the wildcats, the Continental Oil Co. No. 1 Proctor, C NW Section 28-10-20w, had gone to a depth of 10,195 feet, and the crew was reaming casing, preparing to drill ahead. Deep tests were under way at Carter Oil Co. and others No. 1 Smith, C SE SW Section 26-5-8w, Grady County, and at Pure Oil Co. No. 1 Noble, NE SE Section 35-3s-1e, Carter County. Another deep wildcat that will cause considerable excitement if it finds oil was being drilled at Ace Gutowsky and others No. 1 Lankford, NE NE SE Section 34-17-6w, Kingfisher County.

Continued activity in the old areas and further development of pools opened in 1938 will account for the bulk of the activity in 1939—always barring an unanticipated major strike—but the wildcatters will continue as active, if not more so, in the new year as in the old. Northwestern Oklahoma, as a result of the Hillsdale strike and resultant leasing; the Anadarko basin in western Oklahoma; the central counties along the Nemaha ridge, and southern and southwestern counties probably will bear the brunt of the wildcatter's attack.

OKLAHOMA (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
CLEVELAND COUNTY:													
Moore—													
Daily average	7,371	5,949	4,913	4,273	5,157	3,981	3,908	4,390	4,993	4,630	4,104	4,119	
Month	228,501	166,572	152,303	128,190	159,867	119,430	121,148	136,090	149,790	143,530	123,120	127,689	1,756,230
Noble—													
Daily average	.....	.....	.....	.....	.....	.....	214	282	63	68	.....	65	
Month	.....	.....	.....	.....	.....	.....	6,634	8,742	1,890	2,108	.....	2,015	21,389
KAY, GRANT AND NOBLE COUNTIES:													
Blackwell, Deer Creek, Otstot, Caldwell and Webb—													
Daily average	1,319	1,524	1,516	853	813	814	859	829	802	775	737	742	
Month	40,889	42,672	46,996	25,590	25,203	24,420	26,629	25,699	24,060	24,025	22,110	23,002	351,295
Dilworth—													
Daily average	470	481	491	467	434	429	486	478	501	471	445	444	
Month	14,570	13,468	15,221	14,010	13,454	12,870	15,066	14,818	15,030	14,601	13,350	13,764	170,222
Lamont—													
Daily average	491	399	403	405	400	397	400	402	400	404	400	396	
Month	15,221	11,172	12,493	12,150	12,400	11,910	12,400	12,462	12,000	12,524	12,000	12,276	149,008
Ponca City—													
Daily average	224	248	252	249	240	242	232	231	241	228	218	226	
Month	6,944	6,944	7,812	7,470	7,440	7,260	7,192	7,161	7,230	7,068	6,540	7,006	86,067
Braman-North Braman—													
Daily average	3,106	2,357	2,346	2,012	1,928	1,933	1,866	2,017	1,855	1,804	1,633	1,645	
Month	96,286	65,996	72,726	60,360	59,768	57,990	57,846	62,527	55,650	55,924	48,990	50,995	745,058
Hubbard—													
Daily average	536	511	514	566	547	542	594	554	531	551	538	541	
Month	16,616	14,308	15,934	16,980	16,957	16,260	18,414	17,174	15,930	17,081	16,140	16,771	198,565
Thomas—													
Daily average	234	225	229	232	238	231	256	257	247	259	217	230	
Month	7,254	6,300	7,099	6,960	7,378	6,930	7,936	7,967	7,410	8,029	6,510	7,130	86,903
Tonkawa—													
Daily average	2,098	2,204	2,206	2,059	1,989	1,982	2,174	2,148	2,040	2,007	2,029	2,031	
Month	65,038	61,712	68,386	61,770	61,659	59,460	67,394	66,588	61,200	62,217	60,870	62,961	759,255
Billings—													
Daily average	8,223	7,098	6,710	5,495	4,827	4,250	5,602	5,513	5,399	5,559	5,353	5,311	
Month	254,913	198,744	208,010	164,850	149,637	127,500	173,662	170,903	161,970	172,329	160,590	164,641	2,107,749
Lucien—													
Daily average	13,926	12,203	10,921	8,781	7,367	7,206	8,475	8,404	8,257	8,181	7,645	8,080	
Month	431,706	341,684	338,551	263,430	228,377	216,180	262,725	260,524	247,710	253,611	229,350	250,480	3,324,328
Vernon—													
Daily average	331	321	333	313	286	290	358	324	306	301	307	310	
Month	10,261	8,988	10,323	9,390	8,866	8,700	11,098	10,044	9,180	9,331	9,210	9,610	115,001
Polo—													
Daily average	724	667	629	514	503	501	587	600	730	705	819	814	
Month	22,444	18,676	19,499	15,420	15,593	15,030	18,197	18,600	21,900	21,855	24,750	25,234	237,198
Perry district—													
Daily average	198	192	189	191	168	159	186	180	184	182	183	177	
Month	6,138	5,568	5,859	5,730	5,208	4,770	5,766	5,580	5,520	5,642	5,490	5,487	66,758
North Lucien—													
Daily average	419	374	390	486	432	426	612	553	776	688	701	693	
Month	12,989	10,472	12,090	14,580	13,392	12,780	18,972	17,143	23,280	21,328	21,030	21,483	199,539
Miscellaneous—													
Daily average	197	189	194	187	191	188	202	184	192	196	201	197	
Month	6,107	5,292	6,014	5,610	5,921	5,640	6,262	5,704	5,760	6,076	6,030	6,107	70,523
GARFIELD COUNTY:													
Garber—													
Daily average	2,060	1,990	1,987	2,009	1,964	1,959	2,252	1,897	1,897	1,916	1,928	1,913	
Month	63,860	55,720	61,597	60,270	60,884	58,770	69,812	58,807	56,910	59,396	57,840	59,303	723,169
Miscellaneous—													
Daily average	116	111	110	101	107	104	112	111	108	113	110	112	
Month	3,596	3,108	3,410	3,030	3,317	3,120	3,472	3,441	3,240	3,503	3,300	3,472	40,009
LOGAN COUNTY:													
Crescent—													
Daily average	7,570	6,673	5,452	4,656	4,827	3,869	3,872	3,728	3,825	3,760	3,668	3,669	
Month	234,670	186,844	169,012	139,680	149,637	116,070	120,032	115,568	114,750	116,560	110,040	113,739	1,686,602
Langston—													
Daily average	1,117	727	735	737	653	650	618	603	577	569	554	551	
Month	36,487	20,356	22,785	22,110	20,243	19,500	19,158	18,693	17,310	17,639	16,620	17,081	247,982
Marshall-Lovell-Seward—													
Daily average	532	469	474	471	494	476	497	432	465	441	325	336	
Month	16,492	13,132	14,694	14,130	15,314	14,280	15,407	13,392	13,950	13,671	9,750	10,416	164,628
Miscellaneous—													
Daily average	46	114	118	110	119	111	198	207	203	200	202	203	
Month	1,426	3,192	3,658	3,300	3,689	3,330	6,138	6,417	6,090	6,200	6,060	6,293	55,793
CARTER COUNTY:													
Healdton—													
Daily average	9,475	9,449	9,524	9,380	8,825	8,513	9,176	8,850	9,843	9,756	9,566	9,468	
Month	293,725	264,572	295,244	281,400	273,575	255,390	284,456	274,350	295,290	302,436	286,980	293,508	3,400,926
Hewitt—													
Daily average	4,031	4,168	4,268	4,114	3,704	3,625	3,727	3,905	3,695	3,648	3,558	3,602	
Month	124,961	116,704	132,308	123,420	114,824	108,750	115,537	121,055	110,850	113,088	106,740	111,662	1,399,899
Sholem-Alechem—													
Daily average	2,918	3,082	2,959	2,902	2,654	2,588	2,611	2,489	2,512	2,385	2,702	2,610	
Month	90,458	86,296	91,729	87,060	82,274	77,640	80,941	77,159	75,360	73,935	81,060	80,910	984,822
Wildcat Jim—													
Daily average	1,810	1,788	1,603	1,405	1,379	1,362	1,096	854	924	903	879	892	
Month	56,110	50,064	49,693	42,150	42,749	40,860	33,976	26,474	27,720	26,993	26,370	27,652	451,811
Tussey—													
Daily average	4,284	3,960	2,208	1,490	1,551	1,526	795	522	847	413	423	519	
Month	132,804	110,880	68,448	44,700	48,081	45,780	24,645	16,182	25,410	12,803	12,690	16,089	558,512
Tatums—													
Daily average	2,274	2,318	2,114	2,309	2,056	2,018	1,676	1,675	1,642	1,591	1,600	1,963	
Month	70,494	64,904	65,534	69,270	63,736	60,540	51,956	51,925	49,260	49,321	48,000	60,853	705,793
Graham-Fox—													
Daily average	3,515	2,790	3,270	3,114	2,786	2,767	2,915	2,810	2,880	2,874	2,906	2,812	
Month	108,965	78,120	101,370	93,420	86,366	83,010	90,365	87,110	86,400	89,094	87,180	87,172	1,078,572
Brock—													
Daily average	262	290	293	299	281	277	275	284	247	255	252	261	
Month	8,122	8,120	9,083	8,970	8,711	8,310	8,525	8,804	7,410	7,905	7,560	8,091	99,611
Miscellaneous—													
Daily average	154	161	163	177	170	168	101	63	13	10	13	19	
Month	4,774	4,508	5,053	5,310	5,270	5,040	3,131	1,953	390	310	390	589	36,718
COAL COUNTY:													
Daily average	238	151	169	174	145	142	174	170	300	313	301	296	
Month	7,378	4,228	5,239	5,220	4,495	4,260	5,394	5,270	9,000	9,703	9,030	9,176	78,393
LOVE COUNTY:													
Daily average	34	37	21	57	37	40	36	37	38	41	.....	40	
Month	1,054	1,036	651	1,710	1,147	1,200	1,116	1,147	1,140	1,271	.....	1,240	12,712
Daily average	592,966	565,167	558,122	535,029	487,486	467,371	494,481	513,256	503,250	483,018	471,754	467,277	511,347
Total 1938	18,381,946	15,824,672	17,301,782	16,050,870	15,112,066	14,021,130	15,328,911	15,910,936	15,097,500	14,973,558	14,152,620	14,485,593	186,641,584
Total 1937	17,915,954	16,891,224	19,678,955	19,922,970	20,004,982	19,206,870	19,603,718	19,465,892	17,807,580	18,075,325	17,005,050	17,528,268	223,106,788
Total 1936	15,236,345	14,774,717	16,459,543	16,730,460	17,371,532	16,799,250	16,854,359	17,728,993	16,759,620	17,459,913	16,743,240	17,962,733	200,880,705
Total 1935	14,978,642	13,717,900	15,456,786	15,400,050	16,071,051	15,728,730	16,048,080	14,940,636	14,418,870	15,529,915	15,224,280	15,081,934	182,596,874
Total 1934	15,053,166	13,345,276	15,166,471	15,378,390	16,068,199	16,135,650	15,661,200	15,069,348	13,980,030	14,155,592	14,020,950	14,617,740	178,652,012

Working Against Time

Timing the Work?

Completion dates do not disturb Badger Engineers because through long experience they know just about how long it takes to design and erect a complete refinery or single unit. After allowing for unforeseen delays, they set a date. The records show a remarkably high percentage of "on time" completions.

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Annual Review

17 POOLS OPENED IN ILLINOIS IN 1938; 2 IN KENTUCKY; 2 IN INDIANA

By STAFF CORRESPONDENT

Seventeen pools were opened in Illinois in 1938 and one important gas field uncovered, the latter perhaps the outstanding gas discovery of the year in the United States.

The state produced approximately 22,800,000 bbls. of oil during the year, an average of 61,644 bbls. per day. Of this volume of new oil, the old Illinois pools produced 4,440,116 bbls. and the new pools in the Central Coal basin area were responsible for 18,359,884 bbls.

The Noble field in Richland County led in production during the year with a total of 4,258,450 bbls., and the Clay City area was second with 4,000,100 bbls. Both are McClosky lime fields. The Salem pool in Marion County produced 2,620,250 bbls. and Centralia, in Clinton and Marion counties, 3,040,550 bbls. The Louden field in Fayette County accounted for 1,756,225 bbls. The Patoka pool in Marion County produced 1,100,200 bls. The other pools in the basin took a minor part in production, the Aden pool in Wayne County having produced 330,000 bbls.; Cisne, in Clay County, 420,000 bbls.; and the Clay pool in Richland County, 412,000 bbls. The Dix pool in Jefferson County, Flora pool in Clay County, Ina pool in Jefferson County, St. James pool in Fayette County, and scattered small pools did not add much to the grand total. The production figures are all estimates, as the final production figures will not be available until December production data have been completed, which will be early in February.

Completions Total 2,234

The completions of the year in the state numbered 2,234, of which 1,807 were oil wells, 408 dry holes and 19 gas wells. The oil wells yielded a total initial production of 489,590 bbls., or an average of 271 bbls. per well. The per-well average does not represent the true average flush potential of the completed oil wells, as a considerable number were permitted to flow only a short time, and many of them produced through chokes. At the same time, it must be said that the average basin flush producer has not yet measured up to anywhere near the flush production of wells in many pools in the states west of the Mississippi River. There have been no 5,000-bbl. wells completed up to the close of this report. However, the cheapness of drilling even in the deepest part of the basin has made, and will make, the average oil well a profitable investment to its owner, and the posted prices that have thus far been paid are higher than in the Mid-Continent fields.

The features of the year's work in the fields have been the rapid development of the Centralia pool and its swift decline from 25,000 bbls. per day to about 10,000 bbls.; the discovery in June of the Salem, or Lake Centralia, field in Marion County and its feverish development to a point where it was producing over 50,000 bbls. per day at the year's close; and the development of the Louden field in Fayette County, which was opened in 1937. The Centralia field was practically drilled up long before the end of 1938, but the Louden and Salem fields have hundreds of undrilled locations that are sure to yield richly, although both pools are believed to have been completely defined. They are on large structures, however, and many inside locations remain to be drilled.

ILLINOIS

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Bond	10	20	8	1
Brown	2	0	2	0
Clark	12	22	8	1
Clay	153	57,205	18	0
Clinton	391	49,351	44	0
Cass	1	0	1	0
Christian	3	0	3	0
Coles	4	0	4	0
Crawford	5	85	3	0
Cumberland	4	0	4	0
Edgar	4	0	4	0
Effingham	6	0	6	0
Fayette	518	102,100	51	4
Franklin	4	0	4	0
Fulton	1	0	1	0
Hamilton	2	0	2	0
Hancock	1	0	1	0
Jefferson	61	8,505	23	0
Jasper	3	0	3	0
Jackson	3	0	3	0
Lawrence	27	266	10	10
Macon	2	0	2	0
Moultrie	2	0	2	0
McDonough	4	1	3	0
Macoupin	7	0	5	2
Madison	1	0	1	0
Marion	693	180,959	72	0
Montgomery	5	0	4	1
Morgan	3	0	3	0
Perry	4	0	4	0
Pope	1	0	1	0
Piatt	1	0	1	0
Randolph	3	0	3	0
Richland	160	67,683	34	0
St. Clair	7	540	3	0
Saline	1	0	1	0
Shelby	13	0	13	0
Sangamon	1	0	1	0
Wabash	14	225	8	0
Washington	17	0	17	0
Wayne	71	22,628	18	0
White	5	0	5	0
Williamson	1	0	1	0
Warren	2	0	2	0
Total 1938	2,233	489,590	408	19

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	35	6,399	7	0
February	44	17,274	11	0
March	66	16,663	18	0
April	99	22,908	20	2
May	111	25,245	10	1
June	169	34,131	40	1
July	143	26,171	27	0
August	188	34,919	47	0
September	258	49,114	62	2
October	402	102,403	71	3
November	364	81,622	42	3
December	354	72,741	53	7
Total 1938	2,233	489,590	408	19
Total 1937	392	80,282	117	3
Difference	1,841	409,308	291	16

An interesting development, which caused a flurry of excitement in December, was the discovery of good-sized production in the Devonian limestone in the old Sandoval field by Southwest Oil & Gas Co. and Ohio Oil Co. in No. 21 Benoist in Section 8-2n-1e, just north of Centralia. The pay was found at 2,920-26 feet, and the well yielded 400 bbls. of high-gravity oil initially. Oil had been found in this formation in other counties of the state, but in no great quantity, and the same formation has been penetrated in many wildcats without any results in the way of production. At the close of the year it was though likely that the Devonian would pay off in Illinois only in spots.

The Texas Co. opened the Salem field with its No. 1 Tate in Section 5-1n-2e. It is located 660 feet from the north and 762 feet from the west lines of the NW quarter of Section 5-1n-2e. It had been drilled to 1,950 feet, penetrating good saturation in McClosky lime, but the company did not desire to develop the McClosky at that time and plugged back to a pay in the Benoist sand at 1,692-1,735 feet. The well flowed 732 bbls. in 23 hours. The Aux Vases was penetrated at 1,750-95 feet, and the McClosky lay at 1,899 feet to the total depth.

Salem Field Developed

The Texas Co. owns a big block of leases in Townships 1n-2e and 2n-2e and lost no time in proceeding with development work, and by the end of the year had 259 oil wells in the pool. Meanwhile the Magnolia Petroleum Co. got busy; and while its acreage was much smaller than that of the Texas Co., it developed it rapidly and contributed much to the production figure the field attained. Kingwood Oil Co., Ohio Oil Co., Shell Petroleum Corp., Max Pray, W. C. McBride, Inc., Baldwin Oil Co., Wiser Oil Co., Helmerich & Payne, Rockhill Oil Co., Frontier Oil Co., I. D. Lane, Roberts & Murphy, Harry Blackstock, and others took part in the exploitation of the field with success. Near the close of the year some of the operators started exploring the McClosky lime, and the results included a lot of wells of 1,000 bbls. and more from that deeper pay. The Texas Co., which held off from developing the lime, at last yielded to the temptation to ascertain what it had in the lower level, and completed a few McClosky wells with excellent results. The Salem field covers about 9,600 acres of productive leases.

The Carter Oil Co., which owns a big block of leases in the Louden field in Fayette County, led in the development work there. The Louden field, about 10 miles long and about 2½ miles wide, and covering 16,000 acres of reasonably sure production, was opened in 1937. The Carter Oil Co. has been developing its leases on the basis of two wells to 40 acres, locating its wells where possible in the center of 10 acres in diagonally opposite corners of 40-acre plats. The field produced from several sands,

POOL DISCOVERIES IN ILLINOIS IN 1938

Pool and county—	Operator and farm—	S-T-R	Formation	Sand record	Initial production	Completion date
Flora, Clay	Kingwood Oil Co., No. 1 Fred Graham	13-3n- 6e	McClosky	2,971-75	500	June 22
Salem, Marion	Texas Co., No. 1 Tate	5-1n- 2e	Benoist	1,752-1,810	732	June 30
Schrell, Richland	J. V. Wicklund, No. 1 McCauley B	7-2n- 9e	McClosky, Fredonia	2,963-81½	1,000	June 21
——, Jefferson	Nollem & Benoist, No. 1 Kelly	25-4s - 2e	McClosky	3,002-03	85	June 29
Aden, Wayne	Texas Co., No. 1 Silverman	19-3n- 8e	McClosky	3,276-84½	385	Feb. 2
Clay City, Clay	Vermilion Oil Co., No. 1 Duff	19-3n- 8e	McClosky	3,020-24½	138	June 5
Olney, Richland	Bur-Kan Oil Co. and Kingwood Oil Co., No. 1 Allen	27-4n-10e	McClosky	3,036-41	200	Feb. 16
——, Richland	American National Drilling Co., No. 1 Everson	23-3n- 9e	McClosky	3,068-73	†20	May 25
Olson, Clay	Olson Drilling Co., No. 1 Irwin	12-2n- 7e	McClosky	3,060-65	*149	Feb. 2
Ina, Jefferson	Nollem & Benoist, No. 1 Kelly	25-4s - 2e	McClosky	3,002-07	250	Aug. 17
Leech, Wayne	Sloan & Allen, No. 1 Walker	16-3s - 9e	McClosky	3,420-38	250	Sept. 14
North Noble, Richland	Pure Oil Co., No. 1 Wakefield	26-4n- 9e	Cypress	2,564-83	514	Oct. 12
Roaches, Jefferson	Magnolia Petroleum Co., No. 1 Harvey	22-2s - 1e	McClosky	2,231-37	217	Nov. 29
St. James, Fayette	Rosenthal, No. 1 Washburn	30-6n- 3e	Cypress	1,599-1,622	188	Sept. 21
Elk Prairie, Jefferson	Benedum-Trees, No. 1 Jefferson	16-4s - 2e	McClosky	2,745-51	30	Nov. 11
Sandoval, Marion	Devonian Oil Co., No. 21 Benoist	8-2n- 1e	Devonian	2,920-26	400	Dec. 20
North Aden, Wayne	H. H. Weinert, No. 1 Twist	4-2s - 7e	McClosky	3,309-25	400	July 27

*Also 51 bbls. water. †Also 50 bbls. water.

including the Weiler, a stray sand, and Bethel. Lease ownership in the Louden field is not as various as in the Salem field. Carter Oil Co., which was one of the pioneers in the big leasing campaign that preceded the field development, is the principal owner of leases there. The Carter company has hundreds of undrilled locations in Louden and will be kept busy throughout this year and into the next drilling its property.

Throughout the year pipe line proration was in effect in the basin, and near the close of the year about 34,000 bbls. of oil per day was being shipped out of the field for which the producers received less than the posted prices. The Texas Co., Magnolia Petroleum Co., Carter Oil Co., and Pure Oil Co. were provided with pipe lines; and the Owensboro Corp., which changed its name later to Sohio Corp., operated a large gathering system which connected with the trunk lines of the Illinois Pipe Line Co. The Ohio Oil Co. was also a buyer in some parts of the basin area and also shipped out through the Illinois Pipe Line Co.

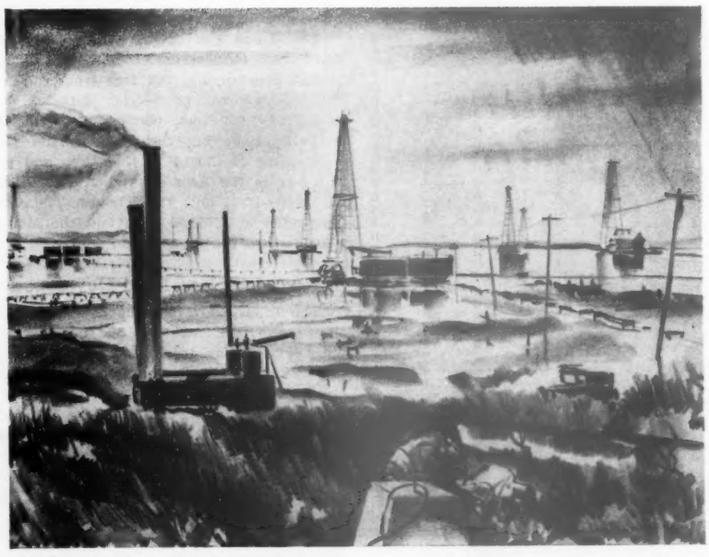
WEST KENTUCKY

Two fields were opened in western Kentucky, both in Henderson County and both McClosky lime pools. In April Hoosier Drilling Co. completed a well on the Blackwell farm, near Birk City, in McClosky lime at 1,872-74 feet, and it produced 1,200 bbls. the first 24 hours. The field was later extended across the Green River into Daviess County. By the end of the year the pool was defined. It was held under buyer proration throughout the nine months and was not permitted to produce more than 5,000 bbls. a day.

In November the Magnolia Petroleum Co. opened a pool near the hamlet of Spottsville, in Henderson County. The well was drilled on the Green farm, and McClosky lime pay was topped at 2,176 feet. The well is credited with an initial production of 1,800 bbls. No more wells had been completed in the pool up to the close of the year.

INDIANA

In Indiana the Sun Oil Co. opened a pool in McClosky lime in Posey County, and a well still not completed, but which started at an estimated rate of 500 bbls. a day was drilled in Gibson County by Hughes and Amos.



Coastal Field — *From a lithograph by E. M. Schiwetz*

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WEST KENTUCKY

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Breckenridge	21	10	13	6
Daviess	145	15,365	42	6
Grayson	10	0	7	3
Hancock	58	578	21	4
Henderson	89	21,372	26	3
McLean	58	1,404	28	1
Muhlenberg	6	3	5	1
Ohio	169	1,358	76	13
Union	1	0	1	0
Webster	14	8	9	3
Caldwell	2	0	2	0
Butler	76	653	48	0
Logan	1	0	1	0
Todd	1	0	1	0
Wayne	1	25	0	0
Wolfe	1	10	0	0
Elliott	1	3	0	0
Hopkins	1	0	1	0
Total 1938	655	40,789	281	40

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	48	539	18	9
February	27	370	13	0
March	31	433	15	1
April	53	1,713	19	6
May	42	1,593	23	3
June	65	3,918	27	5
July	55	7,713	17	4
August	35	3,510	27	4
September	86	7,235	42	1
October	81	7,195	32	4
November	58	3,407	23	1
December	74	3,163	27	2
Total 1938	655	40,789	281	40
Total 1937	690	10,074	200	74
Difference	35	30,715	81	34

EAST KENTUCKY

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Martin	65	668	9	22
Floyd	67	358	7	42
Knott	11	0	2	9
Lawrence	6	16	0	1
Powell	29	305	3	0
Lee	59	829	5	1
Magoffin	10	38	1	0
Johnson	8	6	3	4
Pike	6	0	1	5
Perry	1	0	0	1
Wolfe	2	10	1	0
Scott	1	0	0	1
Elliott	1	5	0	0
Estill	3	5	1	0
Total 1938	269	2,240	33	86

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	20	248	3	3
February	32	284	3	15
March	19	238	0	12
April	24	207	2	6
May	18	241	3	2
June	40	203	5	7
July	31	270	1	13
August	22	240	4	4
September	15	64	2	6
October	24	124	6	5
Noember	19	102	0	7
December	15	23	4	6
Total 1938	269	2,244	33	86
Total 1937	144	4,239	34	119
Difference	125	1,995	1	23

CENTRAL AND SOUTH OHIO

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Ashland	25	16	4	19
Ashtabula	5	0	2	3
Athens	76	81	28	41
Belmont	13	4	5	7
Carroll	11	28	7	0
Columbiana	10	6	6	2
Coshocton	14	141	7	4
Cuyahoga	7	50	1	5
Delaware	1	0	1	0
Fairfield	14	0	4	10
Gallia	4	0	2	2
Guernsey	56	5	20	35
Harrison	5	0	5	0
Hocking	2	5	0	1
Holmes	6	0	4	2
Huron	11	1	1	9
Jackson	1	0	0	1
Jefferson	16	6	5	5
Knox	57	1,028	10	28
Lawrence	8	0	0	8
Licking	101	1,682	17	32
Lorain	29	70	13	15
Mahoning	1	0	1	0
Medina	30	264	16	3
Meigs	41	0	17	24
Monroe	33	118	11	15
Morgan	20	6	7	10
Muskingum	21	121	6	9
Noble	28	60	5	22
Perry	27	61	7	10
Richland	3	0	2	1
Ross	1	0	1	0
Scioto	2	0	1	1
Stark	29	0	5	24
Summit	10	0	3	7
Trumbull	1	0	1	0
Tuscarawas	21	0	6	15
Vinton	6	0	1	5
Washington	123	246	40	44
Wayne	7	0	3	4
Total 1938	876	3,999	275	423

(Continued on Next Page)

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	63	413	13	35
February	64	231	15	41
March	58	285	18	31
April	54	191	14	27
May	70	272	23	32
June	84	630	27	35
July	93	477	38	30
August	92	497	24	45
September	71	328	30	28
October	72	215	25	33
November	80	240	27	39
December	75	220	21	47
Total 1938	876	3,999	275	423
Total 1937	1,170	5,882	412	486
Difference	294	1,883	137	63

INDIANA

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Daviess	10	10	6	3
Gibson	5	405	3	0
Greene	1	0	1	0
Dearborn	2	0	1	1
Henry	1	5	0	0
Parke	1	0	1	0
Decatur	6	0	0	6
Harrison	5	0	4	1
Shelby	7	0	3	4
Knox	13	10	4	8
Perry	19	25	12	3
Warrick	1	0	1	0
Posey	13	585	3	0
Jasper	2	0	2	0
Jennings	1	0	0	1
Hancock	3	0	0	3
Jay	2	20	0	0
Rush	3	0	2	1
Blackford	2	0	0	2
Clay	1	0	1	0
Pike	12	40	6	0
Jefferson	2	0	2	0
Spencer	5	19	1	1
Vandenburgh	4	20	2	0
Huntington	1	5	0	0
Randolph	1	0	1	0
Sullivan	22	70	11	6
Vigo	11	497	0	1
Wabash	2	0	2	2
Total 1938	158	1,711	69	43

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	5	0	5	0
February	16	76	7	5
March	8	0	3	5
April	11	10	7	2
May	7	60	3	2
June	17	148	7	2
July	9	50	6	2
August	15	345	4	5
September	29	290	8	9
October	20	190	8	7
November	11	87	7	1
December	10	455	4	3
Total 1938	158	1,711	69	43
Total 1937	144	554	58	39
Difference	14	1,157	11	4

EASTERN FIELDS

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas
Allegany	611	410	0	1
Bradford	1,557	7,637	0	2
N. Y.-Pa. gas area	72	0	32	40
Middle Field	184	230	7	33
Butler-Armstrong	64	152	14	9
S.W. Pennsylvania	151	205	42	81
S.E. Ohio	332	3,715	93	83
West Virginia	689	1,461	126	449
Total 1938	3,660	13,810	314	698

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	369	784	42	75
February	368	3,102	17	64
March	365	4,110	27	61
April	336	477	23	38
May	290	491	20	43
June	340	964	40	48
July	265	580	28	42
August	302	1,132	32	58
September	280	827	22	58
October	272	383	21	65
November	253	486	20	64
December	220	474	22	80
Total 1938	3,660	13,810	314	698
Total 1937	6,127	15,391	404	969
Difference	2,467	1,581	90	271

LIMA FIELD

Completions by Counties in 1938

County—	Comp.	Prod.	Dry	Gas
Greene	1	2	0	0
Hancock	4	0	2	2
Putnam	6	127	1	0
Sandusky	2	0	1	1
Seneca	16	115	6	6
Wood	4	25	2	1
Wyandot	1	0	1	0
Total 1938	34	269	13	10

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	2	20	0	1
February	3	60	0	1
March	3	45	0	0
April	2	0	0	2
May	4	0	3	1
June	2	84	0	0
July	1	0	1	0
August	2	0	1	1
September	4	10	2	1
October	3	50	1	0
November	3	0	1	2
December	5	0	4	1
Total 1938	34	269	13	10
Total 1937	75	1,283	20	11

Valves

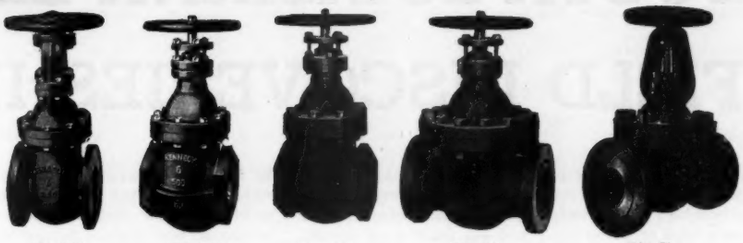

Fig. 170 400-lb. Test | Fig. 177 1000-lb. Test | Fig. 187 700-lb. Test | Fig. 192 1600-lb. Test | Fig. 79 2500-lb. Test

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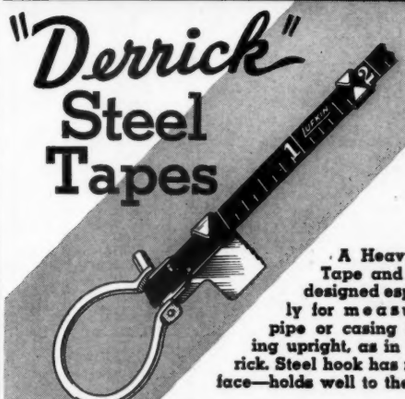

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Annual Review

SOUTH LOUISIANA LED IN GULF COAST FIELD DISCOVERIES IN 1938

By NEIL WILLIAMS

While drilling activity in the Gulf Coast district during 1938 showed a decline from the previous year, a new high in the number of discoveries was established as a total of 32 oil pools and gas fields were opened which at the end of the year represented an estimated 171,710,000 bbls. of oil in new reserves.

The majority of the discoveries were opened in coastal Louisiana which witnessed its busiest year of activity, resulting in 20 new pools. For the first time the number of discoveries surpassed that of the Texas coast, which recorded 13 new pools, a slight decrease.

Probably the most significant features of development in coastal Louisiana were the opening of the first production in the Gulf of Mexico; establishing production from a 13,000-foot horizon in a wildcat drilled in Terrebonne Parish; opening prolific production around the flanks of several old nonproductive salt domes; and the development of important Cockfield production along the Conroe trend in Beauregard Parish.

Miocene production in the Gulf of Mexico was opened by a joint test drilled by Superior Oil Co. and Pure Oil Co., located approximately 2½ miles offshore from Cameron Parish. The discovery well was drilled to a total depth of 9,394 feet, and production was obtained by plugging back and completing in sand at 5,110-18 feet. Two additional producers have been completed, and the sand section in each well has been encountered at a fairly uniform depth.

Deeper Drilling a Feature

Deeper drilling in the district continues to show a large increase, and this phase of development has been one of the most important features. Production was opened at 11,000 and 13,000 feet in two wildcats in Terrebonne Parish, and several active wells are drilling deeper in search of new horizons below these depths. Both discoveries in Terrebonne Parish were opened by the Fohs Oil Co. The Dulac field was opened with the completion of No. 1 Buckley & Bourg, completed through perforated casing at 13,254-,66 feet for an initial production of 124 bbls. daily, flowing through 12/64-inch choke. Several miles southwest, the Bay Baptiste discovery well flowed 53 bbls. of 50-gravity distillate through perforated casing at 11,172-78 feet. This test was also drilled below 13,000 feet, and several encouraging showings below the present producing depths were logged. The significant feature of the two wells is that both are producing from the Miocene section, which leaves the Oligocene section to be explored. No addition development has been started in either field.

Successful Flank Drilling

Prolific production around the flanks of three nonproductive salt domes was opened at Jefferson Island, Iberia Parish; Chacahoula, La Fourche Parish; and at Convent in St. James Parish. At Jefferson Island, Texas Co. No. 1 Bayless-Jones, Section 58-12s-5e, established the first production after numerous attempts had been made, when the well flowed 600 bbls. daily through a 10/64-inch choke. Salt was topped at 8,683 feet, and production was obtained by perforating casing at 8,170-8,210 feet. A second producer has been completed, and the company is keeping one rotary operating. Chacahoula, another old structure, received its first production with the completion of Sun Oil Co. No. 1 Dibert-Stark and Brown Cypress Co. Sand was logged at 7,186-7,253 feet, and the well flowed 25 bbls. per hour through a one-quarter inch choke. A second producer has been completed in the same sand, and a third test is nearing the pay. St. James Parish received its first production as Continental Oil Co. opened a pool at Convent with the completion of No. 1 Realty Operators, which flowed 188 bbls. daily through a quarter-inch choke. The hole was drilled to 7,499 feet, and the well was completed through perforated casing at 6,358-64 feet. This structure was proven a salt dome in 1937 by Shell Petroleum Corp., which farmed out its acreage to the Continental Oil Co.

TEXAS GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas
Amelia	26	7,698	4	0
Anahuac	50	21,604	4	3
Bammel	1	144	0	0
Barbers Hill	4	1,428	0	0
Batson	10	2,270	1	0
Bay City	11	2,603	0	0
Big Hill	1	0	1	0
Blue Ridge	2	0	2	0
Boling	5	642	3	0
Buckeye	1	75	0	0
Call	2	0	2	0
Cedar Bayou	3	27	2	0
Cedar Point	8	3,265	1	0
Cheek	4	1,408	0	0
Cheek—North	3	187	2	0
Clam Lake	3	1,154	0	0
Clay Creek	1	0	1	0
Cleveland	3	66	1	0
Clinton	14	2,008	4	0
Clear Lake	5	1,135	2	1
Conroe	4	1,656	0	0
Cordele	13	2,097	1	1
Cotton Lake	20	3,416	3	0
Damon Mound	1	0	1	0
Danbury	15	991	7	0
Dickinson	85	38,443	5	1
Esperson	5	959	1	0
Eureka	22	10,651	1	0
Fairbanks	129	53,335	8	2
Fannett	1	0	1	0
Five Corners	5	706	0	2
Francitas	2	329	0	0
Friendswood	102	55,684	8	0
Garwood	1	0	1	0
Greens Lake	1	21	0	0
Hankamer	6	1,151	3	0
Hardin	94	40,335	2	0
Hastings	169	90,885	7	0
High Island	5	976	0	0
Hitchcock	17	4,092	6	0
Hull	2	1,529	0	0
Humble	8	961	3	0
Katy	6	0	1	5
Labelle	1	1,066	0	0
League City	3	649	0	0
Livingston	1	120	0	0
Lockridge	14	2,705	2	0
Magnet	9	745	0	0
Manvel	16	6,675	3	0
Mauritz	1	0	1	0
Markham	7	167	6	0
Markham—North	2	268	0	0
McCrosky	5	761	2	0
Nome	7	1,706	3	1
Northwest Conroe	1	0	0	1
Old Ocean	14	4,531	0	0
Orange	28	7,805	5	0
Orchard	4	105	2	0
Palacios	3	422	1	0
Pledger	1	0	0	1
Pickett Ridge	11	1,172	4	0
Pierce Junction	7	2,349	0	0
Port Neches	1	0	1	0
Sandy Point	3	652	0	0
Saratoga	1	0	1	0
Satsuma	2	152	0	0
Seabreeze	9	2,495	1	2
South Anahuac	1	0	0	1
Segno	19	6,613	2	0
South Liberty	1	0	1	0
Silsbee	12	5,579	1	0
South Houston	1	0	1	0
Spindletop	11	2,751	2	0
Spanish Camp	4	0	2	2
Spurger	9	4,508	0	0
Sugarland	2	0	2	0
Thompson	27	4,199	3	2
Tomball	76	24,170	4	11
Turtle Bay	9	2,331	3	0
Van Vleck	9	3,368	0	0
West Columbia	41	19,761	1	0
West Ranch	3	417	0	0
Withers	39	7,188	0	0
Miscellaneous	126	0	126	0
Total	1,411	469,361	269	36

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	121	43,147	19	4
February	76	27,297	17	0
March	143	47,366	31	6
April	93	31,011	15	4
May	111	36,220	22	2
June	127	42,191	29	1
July	157	57,172	30	3
August	140	43,992	27	3
September	121	43,223	24	2
October	126	44,885	15	7
November	103	27,755	24	1
December	93	25,102	16	3
Total 1938	1,411	469,361	269	36
Total 1937	1,695	649,782	313	61
Difference	284	180,421	44	25

Conroe Trend

The Conroe trend, consisting of the northern tier of parishes, received an important strike with the opening of Cockfield production at the Bancroft field in Beauregard Parish. This is the first production to be developed in the parish, and the discovery was made by Republic Production Co. with the completion of No. 1 Lutcher Moore Lumber Co., Section 10-6s-13w. This well was a distillate producer through perforated casing at 7,572-79 feet, although later development provided prolific production for the upper Cockfield section at approximately 7,300 feet. The company is keeping three rotaries operating, and several important extensions have been made without defining the structure.

Another interesting phase of development in coastal Louisiana was the development of new sands in approx-

TEXAS GULF COAST DISCOVERIES IN 1938

Pool, county, company and farm name—	Survey	Date of completion	Producing formation	Producing depth	Initial production	No. prod. wells Dec. 31
Cheek, Jefferson, Glenn H. McCarthy No. 1 Broussard	C. Hillebrand	2-26	Frio	7,718-27	105 bbls. oil and 18 bbls. S.W.	3
Clear Lake, Harris, West Prod. Co. No. 1 Snowden	J. Lindsey	4-21	Frio	5,790-5,805	Distillate production	3
Cedar Point, Turtle Bay, Standard Oil Co. of Texas No. 1 State	Sec. 118	2-13	Frio and Miocene	5,915-66 4,413-30	642 bbls. daily, ¼-in. choke	7
Cordele, Jackson, H. J. Porter No. 1 J. W. Faust	Peter White	3-23	Miocene	2,652-57	177 bbls. daily, ⅛-in. choke	14
Eureka, Harris, Jack Frazier No. 1 Vollmer Neiman	J. Reinerman	3-27	Upper Saline Bayou	7,697-22	616 bbls. daily, ¼-in. choke	17
Fairbanks, Harris, Amerada Pet. Corp. and Stanolind Oil & Gas Co. No. 1 E. W. Mills	A. Larson	1-15	Upper Saline Bayou	6,832-52	675 bbls. daily, ¼-in. choke	113
Francitas, Jackson, Texas Co. No. 1 J. F. Weed	J. D. Newell	11- 1	Frio	7,460-65 7,389-98	89 bbls. daily, 11/64-in. choke	2
League City, Galveston, Midwest Royalty Co. No. 1 Louis Lobit	Perry & Austin	10-25	Frio	9,092-9,105	301 bbls. daily, 9/64-in. choke	3
McCrosky, Matagorda, Pierce Estate No. 1 fee	D. Fenton	2-26	Marginulina	6,600-26	3 bbls. per hr., ⅛-in. choke	4
North Markham, Matagorda, Ohio Oil Co. No. 1 Cornelius	P. C. Yarborough	9-27	Frio	7,727-30	118 bbls. daily, ⅛-in. choke	2
West Ranch, Jackson, Magnolia Pet. Co. No. 3-A West	R. Musquez	8-30	Frio	5,080-86	132 bbls. daily, 9/64-in. choke	3
Northwest Conroe, Montgomery, Housh & Thompson No. 1 E. B. Clary	Wm. S. Allen	11-16	Cockfield	4.736-39	Gas well	1

GULF COAST TEXAS

(Upper District)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Tl. 1938 (bbls.)
AMELIA:													
Daily average	6,255	5,929	5,066	5,162	4,872	4,603	5,213	5,354	4,521	4,574	4,731	3,139	
Month	193,905	156,012	157,046	154,860	151,032	138,090	161,603	165,974	135,630	141,794	141,930	162,099	1,859,975
ANAHUAC:													
Daily average	8,613	8,020	8,255	8,386	7,837	4,951	8,279	8,548	7,302	7,565	7,687	7,558	
Month	267,003	224,560	255,905	251,580	242,947	148,530	256,649	264,988	219,060	234,515	230,610	234,298	2,830,645
ARIOLA:													
Daily average	536	484	495	806	680	515	440	391	397	387	363	350	
Month	16,616	13,832	15,345	24,380	21,080	15,450	13,640	22,121	11,910	11,377	10,890	10,850	187,491
BARBERS HILL:													
Daily average	9,744	9,462	10,056	10,043	10,004	9,450	9,720	9,632	8,953	9,059	9,077	9,110	
Month	302,064	264,836	311,746	301,290	310,124	283,500	301,320	298,592	268,590	280,829	272,310	282,410	3,477,611
BATSON:													
Daily average	1,642	1,585	1,434	1,647	1,873	1,537	1,736	1,662	1,678	1,727	1,896	1,967	
Month	50,902	44,380	44,454	49,410	58,063	46,110	53,816	51,522	50,340	53,537	56,880	60,977	620,391
BAY CITY:													
Daily average	891	807	924	1,355	1,115	1,049	1,581	1,739	1,975	2,045	1,781	1,840	
Month	27,621	22,596	28,644	40,650	34,565	31,470	49,511	53,909	59,250	63,395	53,430	57,040	522,081
BIG CREEK:													
Daily average	726	656	670	683	610	629	665	659	572	572	572	410	
Month	22,506	18,368	20,770	20,490	18,910	18,870	20,615	20,429	17,160	17,732	17,160	12,710	225,720
BLUE RIDGE:													
Daily average	723	672	712	648	695	657	673	627	685	731	665	675	
Month	22,413	18,816	22,072	19,440	21,545	19,710	20,863	19,437	20,550	22,661	19,950	20,925	248,382
BOLING:													
Daily average	1,536	1,654	1,598	1,961	1,820	1,574	1,482	1,432	1,372	1,321	1,466	1,361	
Month	47,616	46,312	49,538	58,830	56,420	47,220	45,942	44,392	41,160	40,951	43,980	42,191	564,552
BUCKEYE:													
Daily average	258	245	259	278	241	204	109	153	81	83	275	283	
Month	7,998	6,860	8,029	8,340	7,471	6,120	3,379	4,743	2,430	2,573	8,250	8,773	74,966
CEDAR POINT:													
Daily average	.....	127	181	227	224	436	288	279	323	414	394	430	
Month	.....	3,556	5,611	6,810	6,944	13,080	8,928	8,649	3,690	12,834	11,820	13,330	95,252
CLEVELAND:													
Daily average	395	363	369	366	393	360	442	436	426	422	383	350	
Month	12,245	10,164	11,439	10,980	12,183	10,800	13,702	13,516	12,780	13,082	11,490	10,850	143,233
CLINTON:													
Daily average	44	38	89	164	301	528	322	254	358	441	405	420	
Month	1,364	1,004	2,759	4,920	9,331	15,840	9,982	7,874	10,740	13,671	12,150	13,020	102,655
CONROE:													
Daily average	31,920	30,926	34,777	34,675	33,488	30,949	33,480	34,180	28,799	29,046	28,432	29,840	
Month	989,520	865,928	1,078,087	1,040,250	1,038,128	928,470	1,037,880	1,059,580	863,970	900,426	852,960	925,040	11,580,239
COTTON LAKE:													
Daily average	1,340	1,270	1,228	1,323	1,349	1,327	1,414	1,536	1,595	1,639	1,863	1,873	
Month	41,540	35,560	38,068	39,690	41,819	39,810	43,834	47,661	47,850	50,809	55,890	58,063	540,594
DAMON MOUND:													
Daily average	340	316	339	325	321	331	304	306	299	291	268	280	
Month	10,540	8,848	10,509	9,750	9,951	9,930	9,424	9,486	8,970	9,021	8,040	8,680	113,149
DANBURY:													
Daily average	103	104	198	261	202	220	355	427	474	477	493	515	
Month	3,193	2,912	6,138	7,830	6,262	6,600	11,005	13,237	14,220	14,687	14,790	15,965	116,839
DICKINSON:													
Daily average	6,896	6,888	6,280	6,800	6,425	5,691	7,677	8,146	7,373	8,332	7,645	7,631	
Month	213,776	192,864	194,680	204,000	199,175	170,730	237,987	252,526	221,190	258,292	229,350	236,561	2,611,131
ESPERSON:													
Daily average	1,239	1,137	1,393	1,387	1,354	1,210	1,342	1,382	1,436	1,479	1,310	1,405	
Month	38,409	31,836	43,183	41,610	41,974	36,300	41,602	42,842	43,080	45,849	39,300	43,555	489,540
EUREKA:													
Daily average	25	23	91	321	500	737	911	1,324	1,231	1,201	970	1,140	
Month	775	644	2,821	9,630	15,500	22,110	28,241	41,044	36,930	37,231	29,100	35,340	259,366
FANNETT:													
Daily average	579	581	607	570	527	429	613	624	525	534	545	535	
Month	17,949	16,268	18,817	17,100	16,237	12,870	19,003	19,344	15,750	16,554	16,350	16,585	202,827
FAIRBANKS:													
Daily average	60	87	198	494	862	1,530	2,481	3,533	3,769	4,305	3,982	4,939	
Month	1,860	2,436	6,138	14,820	26,722	45,900	76,911	109,523	113,070	133,455	119,460	153,109	803,404
FRIENDSWOOD:													
Daily average	900	1,262	1,798	2,209	2,339	2,322	2,903	3,211	3,517	4,827	5,058	4,841	
Month	27,900	35,336	55,738	66,270	72,509	69,660	89,993	99,541	105,570	149,637	151,740	150,071	1,073,965
GOOSE CREEK:													
Daily average	1,689	1,526	1,542	1,643	1,515	1,524	1,676	1,672	1,614	1,583	1,532	1,580	
Month	52,359	42,728	47,802	49,290	46,965	45,720	51,956	51,832	48,420	49,073	45,960	48,980	581,085
HANKAMER:													
Daily average	1,085	1,172	1,218	1,264	1,270	1,354	1,358	1,381	1,214	1,206	1,108	1,105	
Month	33,635	32,816	37,758	37,920	39,370	40,620	42,098	42,811	36,420	37,386	33,240	34,255	448,329
HARDIN:													
Daily average	2,290	2,818	3,602	4,315	4,772	3,429	4,832	5,286	5,129	5,637	5,936	6,045	
Month	70,990	78,904	111,662	129,450	147,932	102,870	149,792	163,766	153,870	174,747	178,080	187,395	1,649,458
HASTINGS:													
Daily average	19,225	18,071	19,071	19,636	19,169	18,113	20,417	21,233	18,171	18,636	19,120	18,989	
Month	595,975	505,988	591,201	589,080	594,239	543,390	632,927	658,223	545,130	577,716	573,600	588,659	6,996,128
HIGH ISLAND:													
Daily average	2,318	2,112	2,171	2,218	1,536	1,537	2,608	2,697	2,693	2,709	1,653	1,675	
Month	71,858	59,136	67,301	66,540	47,616	46,110	80,848	83,607	80,790	83,979	49,590	51,925	789,300
HITCHCOCK:													
Daily average	190	169	174	172	199	145	568	610	814	1,077	781	940	
Month	5,890	4,732	5,394	5,160	6,169	4,350	17,608	18,910	24,420	33,387	23,430	29,140	178,590
HULL:													
Daily average	9,031	8,476	8,666	8,200	7,708	7,281	7,724	8,527	8,255	7,677	8,375	8,505	
Month	279,961	137,328	258,646	246,000	238,948	218,430	239,444	264,337	247,650	237,987	251,250	263,655	2,883,636
HUMBLE:													
Daily average	3,420	3,320	3,334	3,786	3,146	3,115	3,768	3,883	3,610	3,397	3,541	3,565	
Month	106,020	92,960	103,354	113,580	97,526	93,450	116,808	118,978	108,300	105,307	106,230	100,515	1,263,028
KITTRELL:													
Daily average	668	614	612	615	702	630	616	625	525	545	638	664	
Month	20,708	17,192	18,972	18,450	21,762	18,900	19,096	19,375	15,750	16,895	19,140	20,584	226,824
KUBELA:													
Daily average	112	234	217	289	276	250	268	271	215	234	236	240	
Month	3,472	6,552	6,727	8,670	8,556	7,500	8,308	8,401	6,450	7,254	7,080	7,440	86,410
LABELLE:													
Daily average	26	14	25	947	1,009	956	853	801	756	534	766	705	
Month	806	392	775	28,410	31,279	28,680	26,443	24,831	22,680	16,554	21,980	21,855	224,685
LIBERTY:													
Daily average	532	489	506	496	495	467	492	463	502	542	503	496	
Month	16,492	13,692	15,686	14,880	15,345	14,010	15,252	14,353	15,060	16,802	15,090	15,376	182,038
LIVINGSTON:													
Daily average	2,214	2,087	2,064	2,044	1,856	1,737	1,951	1,976	1,705	1,742	1,717	1,725	
Month	68,634	58,436	63,984	61,320	57,536	52,110	60,481	61,256	51,150	54,002	51,510	53,475	693,894
LOCKRIDGE:													
Daily average	1,175	1,146	1,335	1,347	1,272	1,187	2,136	2,271	1,955	1,589	1,521	1,540	
Month	36,425	32,088	41,385	40,410	39,432	35,610	66,216	70,401	58,650	49,259	45,630	47,740	563,246
LOVELLS LAKE:													
Daily average	.....	66	162	161	120	121	127	130	127	126	250	260	
Month	.....	1,848	5,022	4,830	3,720	3,630	3,937	2,030	3,810	3,906	7,500	8,060	48,293
LOST LAKE:													
Daily average	126	119	119	118	125	124	119	122	128	116	124	122	
Month	3,906	3,332	3,689	3,540	3,875	3,720	3,689	3,782	3,840	3,596	3,720	3,782	44,471
LOUISE:													
Daily average	1,471	1,379	1,405	1,401	1,275	1,173	1,359	1,379	1,172	1,194	1,142	1,163	
Month	45,601	38,612	43,555	42,030	39,525	35,190	42,129	42,749	35,160	37,014	34,260	36,053	471,878
MAGNET:													
Daily average	851	970	937	872	862	793	865	1,021	906	841	928	915	
Month	26,381	27,160	29,047	26,160	26,722	23,790	26,815	31,661	28,980	26,071	27,840	28,365	328,992
MANVEL:													
Daily average	8,770	9,014	9,759	9,812	9,460	8,530	9,664	9,796	8,192	8,246	8,839	8,745	
Month	271,870	252,392	302,529	294,360	293,260	255,900	299,584	303,676	245,760	255,626	264,900	271,095	3,310,952
MARKHAM:													
Daily average	1,614	1,754	1,658	1,671	1,526	1,429	1,701	1,607	1,616	1,482	1,475	1,461	
Month	50,034	49,112	51,398	50,130	46,306	42,870	52,731	49,817	48,480	45,942	44,250	45,291	576,361

(Continued on Next Page)

mately 22 fields, which has been estimated to have added 34,320,000 bbls. of proven reserves.

On Texas Coast

For the first time in several years there were no major discoveries on the Texas Gulf Coast, although from a development viewpoint, Fairbanks in Harris County and Cedar Point, offshore from Chambers County in Galveston Bay, appear to be the most outstanding pools developed.

An extensive drilling campaign followed the completion of Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 E. M. Milles, the discovery well of Fairbanks, which is located 3 miles northwest of the Satsuma field and approximately 15 miles northwest of Houston in the A. Larsen Survey. The hole was drilled into salt water sand at a total depth of 6,863 feet, and the completion was made in the upper Saline Bayou formation through perforated casing at 6,838-52 feet. On an initial gauge the well flowed 675 bbls. per day through a quarter-inch choke. Production has been extended in a north and south direction covering approximately 3,500 acres. The 6,800-foot pay has been practically defined, although recent development on the east and west sides indicates that several hundred more will be added to the field due to a lenticular sand condition recently found approximately 3,500 feet east of the field proper. Several tests are expected to be drilled around the flanks of the structure in hopes of finding production in this stray sand. North of the field about 1½ miles, Union Producing Co. opened what appears to be a separate field with the completion of No. 1 Goodykoontz as a distillate producer. Production was obtained by perforating casing in a deeper sand at 7,175-85 feet.

Galveston Bay Production

The opening of Frio production offshore from Chambers County in Galveston Bay has been an incentive for the drilling of several wildcats in inland bays along the entire coast line. This field was opened by a joint test drilled by Standard Oil Co. of Texas and Salt Dome Oil Corp. on State Tract No. 118. Oil sand was cored at 5,915-66 feet, and the well was completed at a total depth of 6,030 feet for an initial production of

Gulf Coast Texas Upper District (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
MAURITZ:													
Daily average	188	154	156	156	138	121	152	153	129	118	121	120	
Month	5,828	4,312	4,836	4,680	4,278	3,630	4,712	4,743	3,870	3,658	3,630	3,720	51,897
MYKAWA:													
Daily average	1,615	1,483	1,445	1,344	1,091	1,053	1,332	1,453	1,210	1,431	1,514	1,264	
Month	50,065	41,524	44,795	40,320	33,821	31,590	40,992	45,043	36,300	44,361	45,420	39,184	493,415
NOME:													
Dail yaverage	1,447	1,375	1,459	1,468	1,446	1,421	1,446	1,525	1,277	1,302	1,266	1,255	
Month	44,857	38,500	45,229	44,040	44,826	42,630	44,826	47,275	39,487	40,362	37,980	38,905	508,917
NORTH CHEEK:													
Daily average	183	144	109	196	127	74	68	110	91	59	69	70	
Month	5,673	4,032	3,379	5,880	3,937	2,220	2,108	3,410	2,821	1,829	2,070	2,170	39,529
OLD OCEAN:													
Daily average	2,715	3,001	3,998	3,740	3,676	4,052	5,159	5,541	6,158	6,443	5,667	5,750	
Month	84,165	84,028	92,938	112,200	113,956	121,560	159,929	171,771	190,898	199,733	170,010	178,250	1,679,438
ORANGE:													
Daily average	756	874	1,042	1,246	1,322	1,325	1,331	1,470	1,363	1,534	1,486	1,575	
Month	23,436	24,472	32,302	37,380	40,982	39,750	41,261	45,570	42,253	47,554	44,580	48,825	468,365
ORCHARD:													
Daily average	369	390	426	434	273	375	545	550	502	525	531	577	
Month	11,439	10,920	13,206	13,020	8,463	11,250	16,895	17,050	15,562	16,275	15,930	17,887	167,897
PALACIOS:													
Daily average	335	356	129	153	130	73	122	66	103	131	397	545	
Month	10,385	9,968	3,899	4,590	4,030	2,790	3,782	2,046	3,193	4,061	11,910	16,895	77,549
PICKETT RIDGE:													
Daily average	1,228	1,140	1,129	1,095	1,067	1,691	1,623	1,674	1,439	1,418	1,423	1,486	
Month	38,068	31,920	34,999	32,850	33,077	50,730	50,313	51,894	44,609	43,958	42,690	46,046	501,154
PIERCE JUNCTION:													
Daily average	3,302	3,120	3,170	2,970	2,997	3,214	3,192	3,360	3,262	3,001	3,418	2,963	
Month	102,362	87,360	98,270	89,100	92,907	96,420	98,952	104,160	101,122	93,031	102,540	91,853	1,158,077
PORT NECHES:													
Daily average	1,329	1,234	1,264	1,279	1,121	1,003	1,152	1,248	1,043	1,015	1,148	1,185	
Month	41,199	34,552	39,184	38,370	34,751	30,090	35,712	38,688	31,290	31,465	34,440	36,735	426,476
RACCOON BEND:													
Daily average	3,859	3,551	3,605	3,585	3,226	2,969	3,470	3,529	2,974	3,007	2,996	2,914	
Month	119,629	99,428	111,755	107,550	100,006	89,070	107,570	109,399	89,220	93,217	89,880	90,334	1,207,058
SANDY POINT:													
Daily average	267	248	328	339	410	259	320	341	381	444	301	310	
Month	8,277	6,944	10,168	10,170	12,710	7,770	9,920	10,571	11,430	13,764	9,030	9,610	120,364
SARATOGA:													
Daily average	947	909	798	882	841	863	856	864	934	1,007	788	820	
Month	29,357	25,452	24,738	26,460	26,071	25,890	26,536	26,784	28,020	31,217	23,640	25,420	319,585
SATSUMA:													
Daily average	351	311	321	350	406	375	339	353	254	288	361	401	
Month	10,881	8,708	9,951	10,500	12,586	11,250	10,509	10,943	7,620	8,928	10,830	12,431	125,137
SEABREEZE:													
Daily average	900	470	501	226	517	545	269	212	223	226	230	206	
Month	27,900	13,160	15,531	6,780	16,027	16,350	8,339	6,572	6,690	6,780	6,900	6,386	137,415
SEGNO:													
Daily average	1,765	1,702	1,800	1,822	1,806	1,699	1,886	2,014	1,927	2,122	1,992	2,004	
Month	54,715	47,656	55,800	54,660	55,986	50,970	58,466	62,434	57,810	65,782	59,760	62,124	686,163
SILSBEE:													
Daily average	1,655	1,547	1,657	1,685	1,603	1,372	1,692	1,898	1,681	1,718	1,849	1,847	
Month	51,305	43,316	51,367	50,550	49,693	41,160	52,452	58,838	50,430	53,258	56,470	57,257	616,096
SOUR LAKE:													
Daily average	1,356	1,258	1,202	1,261	1,200	1,179	1,219	1,260	1,154	1,117	1,204	1,295	
Month	42,036	35,224	37,262	37,830	37,200	35,370	37,789	39,060	34,620	34,627	36,120	40,145	447,283
SOUTH HOUSTON:													
Daily average	3,915	3,325	3,342	3,404	3,238	3,031	3,217	3,299	2,868	2,838	3,081	3,090	
Month	121,365	93,100	103,602	102,120	100,378	90,930	99,727	102,269	86,040	87,978	92,430	95,790	1,175,729
SPINDLETOP:													
Daily average	1,896	1,853	2,189	2,250	2,029	2,010	2,388	2,423	2,220	2,206	2,188	2,130	
Month	58,776	51,884	67,859	67,500	62,899	60,300	73,928	75,113	66,600	68,386	65,640	66,030	784,915
SPURGER:													
Daily average	551	616	698	758	718	674	798	877	806	901	877	880	
Month	17,081	17,248	20,638	22,740	22,258	20,220	24,738	27,187	24,180	27,931	26,310	27,280	277,811
SUGARLAND:													
Daily average	2,771	3,042	3,550	3,533	3,201	2,911	3,419	3,478	3,289	3,854	3,710	3,311	
Month	85,901	85,176	110,050	105,990	99,231	87,330	105,989	107,818	98,670	119,474	111,300	102,641	1,219,570
THOMPSON:													
Daily average	10,867	10,537	10,717	10,929	10,031	9,131	10,530	11,286	10,739	12,395	11,558	11,700	
Month	336,877	295,036	332,227	327,870	310,961	273,930	326,431	349,866	322,170	384,245	346,740	362,700	3,969,053
TOMBALL:													
Daily average	7,865	6,980	7,254	7,354	6,607	6,136	7,452	7,720	6,540	6,830	7,071	7,240	
Month	243,815	195,440	224,874	220,620	204,817	184,080	231,012	239,320	196,200	211,730	212,130	224,440	2,588,478
TURTLE BAY:													
Daily average	1,148	1,047	1,001	1,125	1,095	1,016	1,171	1,240	1,054	1,047	1,109	1,064	
Month	35,588	29,316	31,031	33,750	33,945	30,480	36,301	38,440	31,620	32,457	33,270	32,984	399,182
VAN VLECK:													
Daily average	1,549	2,076	2,165	2,274	1,941	2,208	2,283	2,374	2,055	2,100	2,283	2,070	
Month	48,019	58,128	67,115	68,220	60,171	66,240	70,773	73,594	61,650	65,100	68,490	64,370	771,870
WEST COLUMBIA:													
Daily average	3,573	3,807	4,227	4,886	4,210	4,415	4,582	5,181	4,606	4,939	4,631	4,665	
Month	110,763	106,596	131,037	145,980	130,510	132,450	142,042	160,611	138,180	153,109	138,930	144,615	1,634,823
WITHERS:													
Daily average	1,706	1,595	1,774	1,910	2,320	2,551	3,076	3,268	2,855	2,912	3,059	3,160	
Month	52,886	44,660	54,994	57,300	71,920	76,530	95,356	101,308	85,650	90,272	91,770	97,960	920,606
WILLOW SLOUGH:													
Daily average	.....	111	167	219	167	159	324	396	388	362	367	370	
Month	.....	3,108	5,177	6,570	5,177	4,770	10,044	12,276	11,640	11,222	11,010	11,470	92,464
CLAY CREEK:													
Daily average	531	511	546	608	537	488	574	557	519	465	555	510	
Month	16,461	14,308	16,926	18,240	16,647	14,640	17,794	17,267	15,570	14,415	16,650	15,810	194,728
MISCELLANEOUS:													
Daily average	501	444	457	449	447	429	702	969	1,275	1,214	1,191	1,467	
Month	15,531	12,432	14,167	13,470	13,857	12,840	21,748	29,078	39,537	36,415	36,930	44,020	290,025
Daily average	193,012	183,473	196,862	205,050	196,228	183,975	212,224	222,456	202,654	209,484	208,918	211,302	202,298
Total 1938	5,983,372	5,137,236	6,102,730	6,150,440	6,083,053	5,519,250	6,578,938	6,896,124	6,079,612	6,494,009	6,267,540	6,550,369	73,842,673
Total 1937	5,464,308	5,285,312	6,395,286	5,977,310	6,437,931	6,165,946	6,238,385	7,069,034	6,418,129	6,341,415	5,744,010	6,033,455	73,570,507
Total 1936	4,909,001	4,756,377	5,268,512	5,385,780	5,620,269	5,435,990	5,515,768	5,599,983	5,158,173	5,488,984	4,783,181	5,137,086	63,059,104
Total 1935	4,690,021	4,187,176	4,738,908	4,536,400	4,602,142	4,919,970	4,733,704	4,581,552	4,557,780	4,737,792	4,609,628	4,972,679	55,887,752

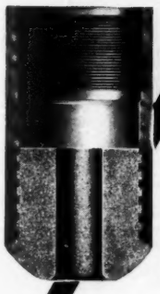
Miscellaneous pools and their total production in the 12-month period were: Ace 22,484 bbls., Allen 2,976 bbls., Bammel 18,129 bbls., Brenham 10,023 bbls., Brookshire 1,837 bbls., Call 5,249 bbls., Cedar Bayou 682 bbls., Diboll 2,373 bbls., Edna 2,181 bbls., Clam Lake 36,580 bbls., Ganado 11,859 bbls., Garwood 248 bbls., Greens Lake 6,654 bbls., Huntington 4,667 bbls., Katy 6,055 bbls., McCrosky 40,661 bbls., Nash 869 bbls., North Dayton 37,274 bbls., Clear Lake 39,824 bbls., League City 4,988 bbls., North Markham 17,066 bbls., West Ranch 17,346 bbls. Total, 290,025 bbls.

1907 1910 1913 1916 1919 1921 1924 1927 1930 1933 1939

Annual Review

AND FORECAST OF THE BAKER LINE OF OIL TOOLS

NEW PEAKS IN SAFETY AND EFFICIENCY



BAKER CEMENT GUIDE CASING SHOE (Right) Outlook continues favorable for this strong, safe Guide Shoe. Easy drillability will remain an important reason for its popularity.

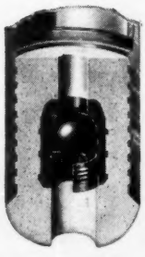
BAKER CEMENT RETAINER (Right) Turned in a remarkable performance in cementing, well repair and well completion operations during the past year. Investment in this item during 1939 should return operators substantial profits.

BAKER CEMENT WASH-DOWN WHIRLER FLOAT SHOE (Above) As result of facilitating landing of casing and affording ultimate in cementing efficiency, the demand for this shoe continues sharply upward.

BAKER WALL SCRAPER (Right) A consistent favorite among operators desiring a ***strong, safe, dependable*** tool for enlarging walls of an open hole. Can be quickly converted into a Baker Wall Sampler.

BAKER CEMENT FLOAT SHOE (Below) Continuing widespread demand for this staple item indicated in 1939 based on its Strength—Valve Efficiency—Drillability.

BAKER CEMENT FLOAT COLLAR (Above) A "logical buy" for use in conjunction with Baker Cement Guide Shoe. Same features of Strength and Drillability.



BAKER CEMENT WASH-DOWN WHIRLER GUIDE SHOE (Above) This strong, safe Guide Shoe, like Wash-Down Whirler Float Shoe, is much in demand for landing casing, especially where bridges are likely to occur.

BAKER CABLE TOOL CORE BARREL (Extreme Left) No decline reported in ability of this tool to take uncontaminated cores in all formations. Simplicity and low cost of operation point to it reaching "new peaks" of popularity with drillers.

SUMMARY AND FORECAST

Trade indications point to an increased demand for these Baker ***Practical*** and ***Dependable*** Oil Tools, with their established peaks of Safety and Efficiency consistently maintained during the coming year.

Investment in these tools should return operators a substantial dividend during the ensuing 12 months with no speculative risk.

Oil men desirous of improving the outcome of their operations during 1939 would do well to use the Baker Line of Equipment, fully described in the Baker Section of the 1939 Composite Catalog.

BAKER OIL TOOLS, INC.
HUNTINGTON PARK, CALIFORNIA
HOUSTON, TEXAS

BAKER OIL TOOLS

642 bbls. daily, flowing through a quarter-inch choke. Eight wells have been drilled, seven of which were producers and one a dry hole, drilled by Humble Oil & Refining Co., which defined the structure to the northwest. Production from the Miocene section was established in one well, Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1-94 State, which was completed in sand at 4,414-30 feet. This sand is not present in all wells and is attributed to a faulted condition on the northeast side of the field, as salt water was cored in the Frio section.

The Cheek field, Jefferson County, which was opened by Glenn H. McCarthy No. 1 Broussard, loomed as an important discovery at the close of the year following the completion of Humble Oil & Refining Co. No. 1 M. C. Todd, which extended production 1½ miles northwest. This well was completed in the basal Frio sand bottomed at 7,719 feet for an initial production of 30 bbls. per hour through a one-quarter inch choke. The discovery well was completed for a small producer, flowing some salt water, while a second well drilled by Shell Petroleum

GULF COAST TEXAS
(Corpus Christi District)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
ALICE—SOUTH:													
Daily average	.....	.....	.....	60	75	766	1,008	1,564	2,338	2,809	3,057	3,813	
Month	.....	.....	.....	1,800	2,325	22,980	31,248	48,484	70,140	87,079	91,710	118,203	473,969
AGUA DULCE:													
Daily average	403	696	581	551	489	501	523	536	503	567	573	585	
Month	12,493	19,508	18,011	16,530	15,159	15,030	16,213	16,616	15,090	17,577	17,190	18,135	197,552
BALDWIN:													
Daily average	283	226	262	356	302	333	297	360	286	287	273	280	
Month	8,773	6,328	8,122	10,680	9,362	9,990	9,207	11,160	8,580	8,897	8,190	8,680	107,969
BENTONVILLE:													
Daily average	443	360	409	390	376	386	575	592	519	550	586	653	
Month	13,733	10,080	12,679	11,700	17,656	11,580	17,825	18,352	15,570	17,050	17,580	20,243	178,048
CAESAR:													
Daily average	310	249	246	273	309	279	245	287	258	197	230	250	
Month	9,610	6,972	7,626	8,190	9,579	8,370	7,595	8,897	8,550	6,107	6,900	7,750	96,146
COLETO CREEK:													
Daily average	482	421	450	381	512	443	501	510	434	504	440	464	
Month	14,942	11,788	13,950	11,430	15,872	13,290	15,531	15,810	13,020	15,624	13,200	14,384	168,841
FLOUR BLUFF:													
Daily average	5,319	4,862	4,980	5,105	4,619	4,226	5,008	5,114	4,441	4,461	4,696	4,233	
Month	164,889	136,136	154,380	153,150	143,189	126,780	155,248	158,534	133,230	138,291	140,880	131,223	1,735,930
GRETA:													
Daily average	8,324	7,691	7,850	7,740	5,052	6,315	7,536	7,611	6,416	6,415	6,170	6,503	
Month	258,044	215,348	243,350	232,200	156,612	189,450	233,616	235,941	192,480	198,865	185,100	201,593	2,542,599
HEYSER:													
Daily average	7,096	6,950	7,514	8,300	7,910	8,416	9,075	9,562	8,644	9,017	9,187	9,831	
Month	219,976	194,600	232,934	249,000	245,210	252,480	281,325	296,422	259,320	279,527	275,610	304,761	3,091,165
KEERAN:													
Daily average	540	511	498	528	512	429	527	523	496	524	510	538	
Month	16,740	14,308	15,438	15,840	15,872	12,870	16,337	16,213	14,070	16,244	15,300	16,461	185,693
LUBY:													
Daily average	1,493	2,021	2,480	2,980	3,116	3,490	5,360	5,868	5,579	5,719	5,988	6,595	
Month	46,283	56,588	76,880	89,400	96,596	104,700	166,160	181,908	167,370	177,289	179,640	197,850	1,540,664
McCAMPBELL:													
Daily average	4,622	5,113	5,302	5,489	5,008	4,647	6,026	5,854	4,797	4,909	4,886	5,356	
Month	143,282	143,164	164,362	154,670	155,248	139,410	186,806	181,474	143,910	152,179	146,580	166,036	1,877,121
McFADDIN-O'CONNOR:													
Daily average	234	334	816	1,059	1,010	1,070	1,617	1,544	1,352	1,359	1,414	1,508	
Month	7,254	9,352	25,296	31,770	31,310	32,100	50,127	47,864	40,560	42,129	42,420	46,748	406,930
MIDWAY:													
Daily average	370	412	547	650	516	620	772	755	715	698	525	587	
Month	11,470	11,536	16,957	19,500	15,996	18,600	23,932	23,405	21,450	21,638	15,750	18,197	218,431
PETTUS:													
Daily average	1,304	1,231	610	606	674	613	624	574	519	532	610	645	
Month	40,424	34,448	18,910	18,180	20,894	18,360	19,344	17,794	15,570	16,492	18,300	19,995	240,711
PLACEDO:													
Daily average	8,665	8,593	9,019	9,108	8,451	7,839	8,023	11,161	6,996	6,931	6,780	7,594	
Month	268,615	240,604	279,589	273,240	261,981	235,170	248,713	345,991	209,880	214,861	203,400	235,414	3,017,458
PLACEDO—EAST:													
Daily average	.....	.....	118	183	176	224	273	344	393	475	544	588	
Month	.....	.....	3,658	5,490	5,456	6,720	8,463	10,664	11,790	14,725	16,320	18,288	101,574
PLUMMER:													
Daily average	202	233	227	214	202	200	264	265	274	232	270	281	
Month	6,262	6,524	7,037	6,420	6,262	6,000	8,184	8,215	8,220	7,192	8,100	8,711	87,127
PLYMOUTH:													
Daily average	11,764	12,398	13,716	13,836	12,516	11,489	11,313	11,559	11,075	12,454	12,145	12,948	
Month	364,684	347,144	425,196	415,080	387,996	344,670	350,703	358,329	332,250	386,074	364,350	401,388	4,477,864
PREMONT:													
Daily average	423	471	630	703	770	715	456	467	427	351	425	375	
Month	13,113	13,188	19,530	21,090	23,870	21,450	14,136	14,477	12,810	10,881	12,750	11,625	178,920
RAY:													
Daily average	465	426	445	389	356	326	340	282	240	210	280	293	
Month	14,415	11,928	13,795	11,670	11,036	9,780	10,540	8,742	7,200	6,510	8,400	9,083	123,099
REFUGIO:													
Daily average	5,812	5,725	5,785	5,393	4,860	4,742	5,447	5,321	5,795	6,201	5,795	6,214	
Month	180,172	150,300	179,335	161,790	150,660	142,260	168,857	162,191	173,850	192,231	173,850	192,634	2,028,130
SAXET:													
Daily average	35,635	33,310	34,409	34,081	32,235	29,248	33,248	32,785	29,286	28,438	14,631	15,832	
Month	1,104,685	932,680	1,066,679	1,022,430	999,285	877,440	1,030,688	1,016,335	878,580	881,578	438,930	490,792	10,740,102
SAXET HEIGHTS:													
Daily average	3,850	3,898	3,286	2,912	2,859	2,659	2,696	2,653	2,196	2,194	2,196	2,321	
Month	119,350	209,144	101,866	87,360	88,629	79,770	83,576	82,242	65,880	68,041	65,880	72,261	1,123,999
SEVIER:													
Daily average	688	968	1,124	1,104	1,014	842	1,518	1,802	1,856	1,999	2,178	2,423	
Month	21,328	27,104	33,844	33,120	31,434	25,260	47,058	55,862	55,680	61,969	65,340	75,113	533,112
STRATTON:													
Daily average	264	209	303	297	214	246	335	311	375	359	375	322	
Month	8,184	5,852	9,393	8,910	6,634	7,380	10,385	9,641	11,250	31,129	11,250	9,982	129,990
SOUTH BURNELL:													
Daily average	938	940	907	999	898	867	939	957	806	826	785	814	
Month	29,078	26,320	28,117	29,970	27,838	26,010	29,109	29,667	24,180	25,606	23,550	25,234	324,679
TAFT:													
Daily average	2,514	2,327	2,446	2,593	2,192	1,990	2,364	2,221	2,019	2,317	1,498	1,401	
Month	77,934	65,156	75,826	71,290	67,952	59,700	93,284	68,851	60,570	71,827	44,940	43,431	780,761
TOMOCONNOR:													
Daily average	11,278	10,648	11,284	11,904	11,897	12,312	12,519	13,515	11,950	12,602	12,362	13,359	
Month	349,618	298,144	349,804	357,120	368,807	369,360	388,089	418,965	358,500	380,662	370,260	414,129	4,423,458
WEST SAXET:													
Daily average	163	183	1,130	2,148	1,895	2,395	2,782	3,260	3,149	3,370	3,409	3,713	
Month	5,053	5,124	35,030	64,440	58,745	71,850	86,242	103,060	94,470	104,470	102,270	115,103	845,857
WEST TULETA:													
Daily average	369	546	505	417	404	369	354	341	310	304	345	386	
Month	11,439	15,288	15,655	12,510	12,524	11,070	7,974	10,571	9,300	9,424	10,350	11,966	138,071
WHITE POINT—EAST:													
Daily average	.....	.....	156	338	467	639	1,143	1,640	1,628	1,869	1,955	2,198	
Month	.....	.....	4,836	10,140	14,477	19,170	36,433	50,840	48,840	57,939	57,650	68,138	368,463
EAST PREMONT:													
Daily average	44	155	68	141	178	162	167	218	188	189	189	234	
Month	1,364	4,340	2,108	4,230	5,518	4,860	5,077	6,758	5,640	5,859	5,670	7,354	58,778
ALFRED:													
Daily average	.....	.....	149	183	145	121	107	105	79	35	52	28	
Month	.....	.....	4,619	5,490	4,495	3,630	3,317	3,255	2,370	1,085	1,560	868	30,689
MISCELLANEOUS:													
Daily average	805	762	775	841	897	1,014	3,303	3,906	3,308	3,519	3,821	4,580	2,307
Month	24,955	21,336	24,025	25,230	27,807	30,420	102,393	121,101	99,240	109,089	114,630	141,980	842,206
Daily average	115,817	116,234	120,241	122,826	114,357	112,099	128,571	135,703	120,804	124,915	110,172	118,057	120,047
Total 1938	3,590,327	3,254,556	3,727,463	3,684,780	3,545,067	3,362,970	3,983,715	4,206,791	3,624,120	3,872,379	3,305,150	3,659,760	43,817,088
Total 1937	3,139,680	3,283,392	3,869,699	3,655,650	3,960,312	3,744,420	2,356,087	2,873,948	2,778,990	2,659,427	2,486,340	2,625,625	37,433,570
Total 1936	1,616,375	1,592,825	1,868,618	1,963,140	2,169,907	2,159,400	2,263,899	2,374,662	2,489,190	2,714,422	2,518,449	2,766,750	26,497,637
Total 1935	855,662	792,344	930,062	896,310	961,961	925,230	1,089,429	1,059,580	1,087,290	1,248,835	1,403,722	1,417,847	12,668,272

Miscellaneous pools and their total production in the 12-month period were: Alta Verde 5,929 bbls., Chapman Ranch 13,098 bbls., Cordele 108,326 bbls., East Telferner 32,297 bbls., Foley 8,457 bbls., Grayburg 124 bbls., Kingsville 16,675 bbls., London 17,168 bbls., McNeil 22,815 bbls., Mount Lucas 36,167 bbls., North Normanna 3,766 bbls., Normanna 13,640 bbls., North McFaddin 9,070 bbls., North Agua Dulce 10,252 bbls., Oakville 25,856 bbls., Port Lavaca 14,676 bbls., Sinton 4,657 bbls., Strauch 819 bbls., White Point 20,231 bbls., Wade 3,566 bbls., Vanderbilt 20,137 bbls., Voss 6,159 bbls., Slick 3,576 bbls., Burnell 217 bbls., Angelita 783 bbls., Dirks 382,178 bbls., Francitas 10,180 bbls., La Rosa 51,387 bbls. Total, 842,206 bbls.

Corp. was completed as a distillate producer. Production in the extension area was extended 1½ miles to the northeast, and it appears that the discovery well was drilled on the south edge of the structure.

The distillate fields in Harris County were converted into oil fields. At Eureka, just outside of the Houston city limits, Jack Frazier No. 1 Nieman-Vollmer, 1,000 feet southeast of the discovery well, a distillate producer completed in 1934, found saturation in 32 feet of the upper Saline Bayou formation and was completed through perforated casing at 7,697-7,722 feet. The trend of development has followed a northeast southwest direction, down dip from the gas cap from which two distillate wells were completed prior to the discovery of oil. On the extreme east side of the field a faulted condition resulted in the opening of production from a second sand below 8,000 feet. Several miles northeast, H. M. Harrel and others No. 1 Polley, 1 mile southeast and southwest of two distillate producers at Bammel, cored saturation in the upper Saline Bayou formation, and was completed through perforated casing at 6,257-61 feet for an initial production of 6 bbls. of fluid per hour, of which 60 per cent was oil and the balance salt water.

The opening of Sparta production in two proven fields along the Conroe trend has resulted in the drilling of several deep tests. This new sand was opened in the Segno and Cleveland fields in Polk and Liberty counties by Gulf Oil Corp. No. 2 Ragan, south of the field proper, in I.&G.N. Survey 15, flowed 623 bbls. of 34-gravity oil from perforated casing at 8,163-68 feet, while at Cleveland No. 21 Kirby Lumber Co. flowed distillate from the same sand at 9,090-100 feet. This well was drilled to a depth of 10,175 feet, which is one of the few deep tests drilled on the Conroe trend. The Sparta sand is a member of the Wilcox series, which has been found during 1937 at Spurger in Tyler County and at Villa Platte in Evangeline Parish, coastal Louisiana, all being located on the same trend, which extends a distance of approximately 300 miles.

Two piercement types of salt domes were found, the most interesting being in the Gulf of Mexico, offshore from Jefferson County, and the other in Caillou Bay, Terrebonne Parish, coastal Louisiana. Humble Oil & Refining Co. No. 1 State, located on the McFaddin beach prospect, 1 mile offshore in the Gulf of Mexico, topped salt at 2,603 feet and drilled to a total depth of 2,655 feet, where the hole was abandoned. Several wells have been drilled to outline the salt cap, and the company is engaged in drilling a deep test on the flank of the dome.

LOUISIANA GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas
Abbeville	5	731	2	0
Anse La Butte	9	141	6	0
Bateman Lake	1	350	0	0
Bayou Blue	6	245	5	0
Bayou des Allemands	5	790	3	0
Bancroft	6	2,243	0	0
Bay Baptiste	1	53	0	0
Bay St. Elaine	7	728	5	0
Big Lake	3	96	2	0
Black Bayou	3	835	0	0
Bosco	2	368	0	0
Caillou Island	3	915	1	0
Cameron Meadows	9	1,695	2	0
Chacahoula	2	930	0	0
Charenton	38	6,347	9	0
Chalkley	1	0	0	1
Cheneyville	3	1,004	1	0
Choctaw	2	1,684	0	0
Creole	3	1,337	0	0
Crowley—North	14	5,784	3	0
Crowley—South	1	35	0	0
Darrow	10	2,690	6	0
Dog Lake	4	1,904	1	0
Dulac	1	124	0	0
Edgerly	2	0	2	0
Elston—South	1	0	1	0
Fausse Point	1	25	0	0
Four Isle	2	0	1	1
Gueydan	3	0	3	0
Garden Island	6	4,850	1	0
Gibson	9	6,398	0	0
Grand Prairie	2	556	0	0
Gillis	4	198	1	1
Hackberry	31	5,323	7	3
Horseshoe Bayou	1	350	0	0
Hester	2	188	1	0
Iowa	1	112	0	0
Jefferson Island	2	852	0	0
Jeanerette	6	4,868	2	0
Jennings	58	17,815	6	0
Lafitte	9	9,668	0	0
Lake Barre	2	65	1	0
Lake Hermitage	2	5	1	0
Lake Long	4	1,282	0	0
Lake Pelto	2	946	1	0
Lake Verret	1	273	0	0
Leesville	7	2,179	1	0
Lirette	5	88	2	1
Lockport	4	190	2	0
New Iberia	29	9,563	7	0
North Tepetate	2	243	0	0
Port Barre	8	2,453	0	0
Potash	11	0	11	0
Quarantine Bay	2	496	0	0
Raceland	4	2,194	1	0
Roanoke	6	1,024	2	0
Sorrento	6	684	2	1
South Baton Rouge	7	1,601	3	0
South Houma	1	450	0	0
South Jennings	1	51	0	0
South Roanoke	1	307	0	0
Starks	5	174	3	0
Sulphur	9	1,418	2	1
Tepetate	1	222	0	0
Timbalier Bay	1	304	0	0
Valentine	13	3,235	6	1
Venice	7	2,752	2	0
Villa Platte	29	11,275	2	0
Vinton	4	115	2	0
Welsh	6	5	5	6
West Gueydan	3	400	2	0
White Castle	3	584	1	0
Woodlawn	4	922	0	0
Miscellaneous	56	0	56	0
Total	525	127,732	186	10

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	58	12,312	32	0
February	30	7,416	10	1
March	45	12,367	13	1
April	33	6,415	12	2
May	33	8,901	12	0
June	40	13,162	9	0
July	56	13,834	19	2
August	52	11,678	22	0
September	45	10,840	17	1
October	42	10,903	11	1
November	45	8,969	16	2
December	46	10,935	13	0
Total 1938	525	127,732	186	10
Total 1937	453	139,144	170	10
Difference	72	11,412	16	0

LOUISIANA GULF COAST DISCOVERIES IN 1938

Pool, parish, company and farm name—	S-T-R	Date of comp.	Producing formation	Producing depth	Initial production	No. prod. wells Dec. 31
*Bancroft, Beauregard, Republic Prod. Co. No. 1 Lutcher-Moore	10- 6 -13w	5-5	Cockfield	7,572-79 7,300	35,000,000 cu. ft. gas	5
Bay Baptiste, Terrebonne, Fohs Oil Co. No. 1 Bay Baptiste	41-19s-19e	8-23	Miocene	11,172-78	53 bbls. distillate, 10/64-in. choke	1
Grand Bay, Plaquemines, Gulf Oil Corp. No. 1 Grand Prairie Levee	6-20s-19e	7-21	Miocene	6,048-6,151	401 bbls., ¼-in. choke	3
Creole (Gulf of Mexico), Cameron, Superior Oil Prod. and Pure Oil Co. No. 1 State		3-11	Miocene	5,011-30	510 bbls., 7/32-in. choke	3
Chacahoula, La Fourche, Sun Oil Co. No. 1 Dibert, Stark & Brown	70-15s-15e	9-15	Miocene	7,186-7,253	600 bbls., ¼-in. choke	2
Chalkley, Cameron, Humble Oil & Ref. Co. No. 2 Hanzen	9-12s- 6w	11-18	Oligocene	8,562-68	1,080,000 cu. ft. gas, ⅛-in. choke	9
Convent, St. James, Continental Oil Co. No. 1 Realty Operators	16-12s- 5e	8-18	Miocene	6,358-64	188 bbls., ¼-in. choke	1
Dulac, Terrebonne, Fohs Oil Co. No. 1 Buckley & Bourg	77-19s-17e	7-14	Miocene	13,254-66	124 bbls., 12/64-in. choke	1
Jefferson Island, Iberia, Texas Co. No. 1 Bayless-Jones	58-12s- 5e	6-23	Miocene	8,170-8,210	600 bbls., 10/64-in. choke	2
North Tepetate, Acadia, Atlantic Ref. Co. No. 1 Klumpp	12- 7s- 2w	10-12	Marginulina	7,960-70	56 bbls. distillate, ¼-in. choke	2
Raceland, La Fourche, Amerada Pet. Corp. No. 1 South Coast Corp.	34-15s-19e	1-28	Miocene	10,183-10,207	720 bbls., ¼-in. choke	3
South Crowley, Acadia, Humble Oil & Ref. Co. No. 1 Finch	22-10s- 1e	6-9	Marginulina	7,311-13	35 bbls. oil, 65 bbls. S.W. (well later abandoned)	1
South Houma, Terrebonne, Shell Pet. Corp. No. 1 Peters	73-18s-18e	11-18	Miocene	10,300-05	450 bbls., 16/64-in. choke	1
Timbalier Bay, La Fourche, Gulf Oil Corp. No. 3 Louisiana State	36-23s-21e	1-28	Miocene	6,955-59	304 bbls., 7/32-in. choke	1
University, E. Baton Rouge, Austin B. Taylor No. 1 Duplanter	65 7-s- 1w	3-25	Miocene	6,472-77	465 bbls., 7/32-in. choke	6
West Gueydan, Vermilion, Magnolia Pet. Co. No. 1 Ferguson	5-12s- 2w	7-14	Marginulina	7,140-50	400 bbls., ¼-in. choke	1
Lake Verret, St. Martin, Shell Pet. Corp. No. 1 Burdin	15-14s-12e	12-13	Miocene	8,017-20	273 bbls., ¼-in. choke	1
†Woodlawn, Jeff Davis, Union Sulphur Co. No. 1 Calcasieu Nat. Bank	12- 9s- 6w	2-4	Marginulina	8,286-88	50 bbls. distillate, 12/64-in. choke	4
Golden Meadows, La Fourche, Texas Co. No. 1 Laterre	1-20s-21e	12-12	Miocene	8,500-10	189 bbls., 7/32-in. choke	1
Lake Mongoulois, St. Martin, St. Martin No. 6 Lake Mongoulois	10-10s- 9e	12-27	Miocene	9,763-74	42 bbls. distillate, 5/32-in. choke	1

*Second well drilled completed for initial production of 310 bbls. daily, ⅛-in. choke, sand 7,272-88 feet. †Second well drilled completed for initial production of 586 bbls. daily, ¼-in. choke, sand 8,894-93 feet.

COASTAL LOUISIANA

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
ABBEVILLE:													
Daily average	5	335	743	815	801	667	615	565	597	596	557	365	
Month	155	9,380	23,033	24,450	24,831	20,010	19,065	17,515	17,910	18,476	16,710	11,315	202,850
ANSE LA BUTTE:													
Daily average	349	290	277	216	324	316	140	89	132	99	112	106	
Month	10,819	8,120	8,587	6,480	10,044	9,480	4,340	2,759	3,960	2,969	3,360	3,286	74,204
BAYOU MALLET:													
Daily average	.....	.....	18	128	146	239	223	75	48	227	194	218	
Month	.....	.....	558	6,870	4,526	7,170	6,913	2,325	1,440	7,037	5,820	6,758	49,417
BAYOU SALE (Horseshoe Bayou):													
Daily average	420	404	394	387	655	753	810	810	641	741	780	678	
Month	13,020	11,312	12,214	11,610	20,305	22,590	25,110	25,110	19,230	22,971	23,400	21,018	227,890
BLACK BAYOU:													
Daily average	3,793	3,752	3,768	3,794	3,750	3,482	3,409	3,427	3,401	3,504	3,123	2,733	
Month	117,583	105,056	116,808	113,820	116,250	104,460	105,679	106,237	102,030	108,624	93,690	84,723	1,274,960
BOSCO:													
Daily average	6,263	6,042	6,147	6,047	6,092	6,045	5,736	5,569	5,313	5,025	5,169	5,108	
Month	194,153	169,176	190,557	181,410	188,852	181,350	177,816	172,639	159,390	155,775	155,070	158,348	2,084,536
CAILLOU ISLAND:													
Daily average	18,080	18,119	19,163	19,168	17,225	17,389	18,228	16,732	17,363	18,191	15,323	15,299	
Month	560,480	507,332	594,052	575,040	533,975	521,670	565,068	518,692	520,890	563,921	459,690	474,369	6,395,180
CAMERON MEADOWS:													
Daily average	3,514	4,067	4,080	4,100	3,937	3,860	3,399	3,244	3,179	3,134	3,211	2,430	
Month	108,934	113,876	126,480	123,000	122,047	115,800	105,269	100,564	95,370	97,154	96,330	75,330	1,280,154
CHARENTON:													
Daily average	1,244	1,782	2,147	2,510	2,587	3,137	3,548	3,440	3,778	3,309	3,610	3,521	
Month	38,564	49,896	66,557	75,300	80,197	94,110	109,988	106,640	113,340	102,579	108,300	110,151	1,055,622
CHOCTAW:													
Daily average	1,262	1,146	1,184	1,096	1,213	1,656	1,351	1,249	1,202	1,589	1,668	1,524	
Month	39,122	32,088	36,704	32,880	37,603	49,680	41,881	38,719	36,062	49,259	50,040	47,244	491,282
CREOLE:													
Daily average	.....	.....	.....	247	280	283	330	681	830	808	701	953	
Month	.....	.....	.....	7,410	8,680	8,490	10,230	21,111	24,900	25,048	21,030	29,543	156,442
CROWLEY-NORTH:													
Daily average	613	867	924	813	818	719	736	1,124	1,150	1,255	1,563	1,526	
Month	19,003	24,276	28,644	24,390	25,358	21,570	22,816	34,844	34,500	38,905	46,890	47,306	368,502

(Continued on Next Page)

Louisiana Gulf Coast (Continued)

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
DARROW:													
Daily average	1,444	1,372	1,452	1,325	2,422	2,639	1,497	1,413	3,100	3,131	2,808	2,799	
Month	44,764	38,416	45,012	39,750	75,082	79,170	46,407	43,803	93,000	97,061	84,240	86,769	773,474
DOG LAKE:													
Daily average	2,462	2,516	2,024	1,631	1,314	1,577	1,474	779	717	979	937	858	
Month	76,322	70,448	62,744	48,930	40,734	47,310	45,694	24,149	21,510	30,349	28,110	26,598	522,898
EAST BATON ROUGE:													
Daily average	.....	.....	.....	359	452	288	323	417	649	918	980	1,030	
Month	.....	.....	.....	10,770	14,012	8,640	10,013	12,927	19,470	28,458	29,400	31,930	165,620
EDGERLY:													
Daily average	167	177	168	159	157	155	142	163	160	165	165	168	
Month	5,177	4,956	5,208	4,770	4,867	4,650	4,402	5,053	4,800	5,115	4,950	5,208	59,156
GARDEN ISLAND:													
Daily average	2,498	2,293	2,295	2,974	2,805	2,306	2,937	2,302	2,033	1,904	1,717	1,631	
Month	77,438	64,204	71,145	89,220	86,955	69,180	91,047	71,362	60,990	59,024	51,510	49,561	841,636
GIBSON:													
Daily average	3,017	3,010	3,284	2,417	2,393	1,892	2,079	2,756	3,005	3,082	2,815	2,921	
Month	93,527	84,280	101,804	72,510	74,183	56.760	64,449	85,436	90,150	95,542	84,450	87,630	990,721
GILLIS:													
Daily average	9,239	9,631	9,343	8,941	9,253	8,686	8,546	8,179	8,246	7,988	8,121	7,868	
Month	286,409	296,668	289,633	268,230	286,843	260,580	265,926	253,549	247,380	247,528	243,630	243,908	3,163,284
GUEYDAN:													
Daily average	446	448	444	440	439	437	432	427	427	489	444	436	
Month	13,826	12,544	13,764	13,200	13,609	13,110	13,392	13,237	12,810	15,159	13,320	13,516	161,487
HACKBERRY (East):													
Daily average	8,246	7,899	7,535	7,294	7,062	6.792	6,667	6,430	6,078	6,047	6,498	5,856	
Month	255,626	221,172	233,585	218,820	218,922	203,760	206,677	199,330	82,340	87,457	194,940	181,536	2,404,165
HACKBERRY (Old):													
Daily average	2,920	3,004	2,605	2,916	3,557	3,498	3,555	3,689	3,742	4,124	4,041	4,036	
Month	90,520	84,112	80,755	87,480	110,267	104,940	110,205	114,359	112,260	127,844	121,230	125,116	1,269,088
IOWA:													
Daily average	16,122	15,941	15,001	15,627	15,421	16,933	14,898	15,386	15,786	15,931	14,562	13,942	
Month	499,782	446,348	465,031	468,810	478,051	507,990	461,838	476,966	473,580	493,861	438,860	432,202	5,643,319
JEANERETTE:													
Daily average	6,920	6,912	7,500	7,251	7,087	7,048	7,119	6,732	6,617	6,438	6,384	6,385	
Month	214,520	193,536	232,500	217,530	219,697	211,440	220,689	208,692	198,510	199,578	191,520	197,935	2,506,147
JENNINGS:													
Daily average	15,785	15,653	17,797	19.007	19.636	19,952	17,730	22,601	24,344	24,454	23,771	24,552	
Month	489,335	438,284	551,707	570,210	608,716	598,560	549,630	700,631	730,320	758,074	713,130	761,112	7,469,709
LAFITTE:													
Daily average	15,142	15,143	17,186	17,614	13,809	15,559	17,788	15,862	17,711	18,624	15,487	15,636	
Month	469,402	424,004	532,766	528,420	428,079	466,770	551,428	491,722	531,330	577,344	464,610	485,716	5,951.591
LAKE BARRE:													
Daily average	2,518	2,386	2,381	2,023	1,894	1,832	1,863	1,663	1,506	1,362	1,402	1,296	
Month	78,058	66,808	73,811	60,690	58,714	54,960	57,753	51,553	45,180	42,222	42,060	40,175	671,985
LAKE LONG:													
Daily average	340	573	748	722	680	643	675	690	687	1,213	945	1,119	
Month	10,540	16,044	23,188	21,660	21,080	19,290	20,925	21,390	20,610	37,603	28,350	34,689	275,369
LAKE PELTO:													
Daily average	743	862	1.514	1,502	1,285	1,276	1,231	1,268	1,222	1,214	1,080	713	
Month	23,033	24,136	46,934	45,060	39,835	38,280	38,161	39,308	36,660	37,634	32,400	22,103	423,544
LAKE WASHINGTON:													
Daily average	1,200	1,198	975	876	749	984	985	884	730	727	737	673	
Month	37,200	33,544	30,225	26,280	23,219	29,520	30,535	27,404	21,900	22,537	22,110	20,863	325,337
LEESVILLE:													
Daily average	5,950	6,294	5,444	4,597	4,890	4,982	4,662	4,578	4,749	4,733	5,140	5,316	
Month	184,450	176,232	168,764	137,910	151,590	149,460	144,522	141,918	142,470	146,723	154,200	164,796	1,863,035
LOCKPORT:													
Daily average	1,171	990	995	884	980	1,012	1,143	1,041	996	1,102	1,041	1,056	
Month	36,301	27,720	30,845	26,520	30,380	30,360	35,433	32,271	29,880	34,162	31,430	32,736	378,038
NEW IBERIA:													
Daily average	13,772	13,536	13,068	13,707	13,513	14,781	15,591	15,048	15,631	15,808	15,531	15,736	
Month	426,932	379,008	405,108	411,210	418,903	443,430	483,321	466,488	468,930	490,048	465,930	487,816	5,347,124
PORT BARRE:													
Daily average	1,343	1,212	1,366	1,791	2,102	1,897	2,005	2,042	2,076	1,947	2,066	1,907	
Month	41,633	33,936	42,346	53,730	65,162	56,910	62,155	63,302	62,280	60,357	61,980	59,117	662,908
QUARANTINE BAY:													
Daily average	.....	706	758	905	589	610	625	592	660	1,092	1,082	1,049	
Month	.....	19,768	23,498	27,150	18,259	18,300	19,375	18,352	19,800	33,852	32,460	32,519	263,333
RACELAND:													
Daily average	134	689	548	598	489	699	745	708	711	779	978	1,367	
Month	4,154	19,292	16,988	17,940	15.159	20,970	23,095	21,948	21,330	24,149	29,340	42,377	256,742
ROANOKE:													
Daily average	4,123	4,614	4,479	4,011	3,771	3,436	3,138	3,017	3,144	3,088	2,779	2,701	
Month	127,813	129,192	138,849	120,330	116,901	103,080	97,278	93,527	94,320	95,728	89,370	83,731	1,290,119
SORRENTO:													
Daily average	146	144	142	316	463	460	299	337	321	304	384	369	
Month	4,526	4,032	4,402	9,480	14,353	13,800	9,269	10,447	9,630	9,424	11,520	11,439	112,322
SOUTH ROANOKE:													
Daily average	90	102	113	130	132	78	72	73	88	190	120	167	
Month	2,790	2,856	3,503	3,900	4,092	2,340	2,232	2,263	2,640	5,890	3,600	5,177	41,283
STARKS:													
Daily average	641	604	581	594	552	618	573	585	492	503	490	489	
Month	19,871	16,912	18,011	17,820	17,112	18,540	17,763	18,135	14,760	15,593	14,700	15,159	204,376
ST. MARTINSVILLE:													
Daily average	710	670	692	691	695	693	696	689	685	694	686	697	
Month	22,010	18,760	21,452	20,730	21,545	20,790	21,576	21,359	20,550	21,514	20,580	21,607	252,473
SULPHUR:													
Daily average	3,426	2,762	2,432	2,429	2,607	2,852	3,688	3,769	4,307	3,656	3,989	4,483	
Month	106,206	77,336	75,392	72,870	80,817	85,560	114,328	116,839	129,210	113,336	119,670	138,973	1,230,537
SWEET LAKE:													
Daily average	740	740	772	735	722	712	893	751	953	1,040	961	982	
Month	22,940	20,720	23,932	22,050	22,382	21,360	27,683	23,281	2,859	32,240	29,830	30,442	279,719
TEPETATE:													
Daily average	5,624	5,658	5,503	5,562	5,742	5,918	5,647	5,207	5,007	5,047	5,283	5,326	
Month	174,344	158,424	170,593	166,860	178,002	177,540	175,057	161,417	150,210	156,457	158,490	165,106	1,992,500
TIMBALIER BAY:													
Daily average	67	409	298	288	40	96	1	.....	.....	.....	.....	.....	
Month	2,077	11,452	9,238	8,640	1,240	2,880	31	.....	.....	.....	.....	.....	35,558
VALENTINE:													
Daily average	5,505	5,202	4,909	4,458	4,627	4,771	4,605	4,117	4,539	4,196	3,928	3,925	
Month	170,655	145,656	152,179	133,740	143,437	143,130	142,755	127,627	136,170	130,076	117,840	121,675	1,664,940
VENICE:													
Daily average	868	687	744	1,121	1,119	1,536	1,484	1,437	1,593	2,051	2,056	2,049	
Month	26,908	19,236	23,064	33,630	34,689	46,080	46,004	44,547	47,790	63,581	61,680	63,519	510,728
VILLA PLATTE:													
Daily average	181	625	743	801	2,297	3,014	1,936	2,245	3,947	3,520	4,140	4,378	
Month	5,611	17,500	23,033	24,030	71,207	90,420	60,016	69,595	118,410	109,120	124,200	135,718	848,860
VINTON:													
Daily average	1,191	1,272	1,244	1,211	939	1,323	1,204	1,211	1,146	1,210	1,161	1,156	
Month	36,921	35,616	38,564	36,330	29,109	39,690	37,324	75,541	34,380	37,510	34,830	35,836	471,651
WAX LAKE (Bateman Lake):													
Daily average	655	395	335	349	196	314	408	410	410	409	312	395	
Month	20,305	11,060	10,385	10,470	6,076	9,420	2,648	12,710	12,300	12,679	9,360	12,245	139,658
WHITE CASTLE:													
Daily average	1,265	1,315	1,602	1,567	1,487	1,640	1,556	1,770	1,776	1,924	1,799	1,743	
Month	39,215	36,820	49,662	47,010	46,097	49,200	48,236	54,870	53,280	59,644	53,970	54,033	592,037
WOODLAWN:													
Daily average	.....	30	60	107	115	247	845	401	798	1,216	978	986	
Month	.....	840	1,860	3,210	3,565	7,410	26,195	12,431	23,940	37,696	29,340	30,566	177,053
MISCELLANEOUS:													
Daily average	625	1,177	648	818	703	958	1,383	1,974	2,152	3,417	4,343	5,379	
Month	19,375	32,956	20,088	24,540	21,793	28,740	42,873	61,176	64,560	105,926	130,280	166,755	719,062
Daily average	172,979	175,655	178,573	180,170	177,013	183,690	181,694	181,873	186,384	195,187	188,458	187,977	182,503
Total 1938	5,362,349	4,918,340	5,535,763	5,405,100	5,487,403	5,510,700	5,632,515	5,638,070	5,591,521	6,050,813	5,653,750	5,827,301	66,613,625

Miscellaneous pools and their total production for the 12-month period were: Bayou Blue 12,416 bbls., Bayou des Allemands 65,291 bbls., Bay St. Elaine 84,797 bbls., Big Lake 21,158 bbls., Cankton 10,553 bbls., Cheneyville 157,113 bbls., Four Isle 1,307 bbls., Lake Hermitage 10,417 bbls., Lirette 23,498 bbls., South Elton 8,765 bbls., Welch 10,070 bbls., South Crowley 240 bbls., Bancroft 62,246 bbls., Bay Baptiste 150 bbls., Bayou Boullion 18,841 bbls., Chacahoula 60,270 bbls., Chalkley 671 bbls., Convent 18,418 bbls., Delarge 11,971 bbls., Fausse Point 4,296 bbls., Golden Meadows 2,294 bbls., Grand Bay 49,571 bbls., Jefferson Island 21,229 bbls., North Tepetate 6,683 bbls., South Jennings 6,580 bbls., South Houma 15,957 bbls., West Gueydan 29,472 bbls., West Lake Verret 4,788 bbls. Total 719,062 bbls.

Turner Valley Extensions Are 1938 Feature in Canada

By VICTOR LAURISTON

Canadian petroleum production in 1938 established a new all-time high, despite the enforcement of increasingly drastic proration in the Turner Valley crude area which accounted for the major portion of the increase. Official figures, with production for December estimated, indicate an aggregate of 6,870,000 bbls. from all Canadian fields, compared with 2,944,345 bbls. in 1937.

The comparative figures for the various Canadian provinces are:

	1937 (bbls.)	1938 (bbls.)
New Brunswick	22,481	23,840
Ontario	165,478	168,271
Alberta	2,745,015	6,667,889
Northwest Territories	11,371	*10,000
Total	2,944,345	6,870,000

*Estimated.

Natural Gas Production

In natural gas production the total for 1938 is estimated at 33,351,000,000 feet, a substantial increase over the 1937 output of 27,918,191,000 feet. This represents gas commercially used or marketed, and does not include Turner Valley gas residual burned in flares. The three major gas-producing provinces all showed increases over 1937. Following are detailed figures:

	1937 (feet)	1938 (feet)
New Brunswick	576,988,000	583,000,000
Ontario	10,181,325,000	10,740,000,000
Alberta	17,066,664,000	21,937,400,000
Manitoba	600,000	600,000
Saskatchewan	92,614,000	90,000,000
Total	27,918,191,000	33,351,000,000

December figures are estimated and subject to slight revision.

Alberta Fields

In Alberta, the Turner Valley field, in the face of continued proration, steadily increased its production; but several of the newer producing areas also showed gains over 1937. The new Taber field in southern Alberta displaced Red Coulee as the second producing area in the province. With December figures estimated, Alberta fields in 1937 and 1938 compare as follows:

	1937 (bbls.)	1938 (bbls.)
Turner Valley (limestone prod.)	2,756,632	6,607,887
Turner Valley (shallow prod.)	10,589	9,106
Red Coulee (light crude)	13,790	14,281
Wainwright (heavy crude)	14,050	13,858
Dina-Ribstone (heavy crude)	647	4,421
Taber (medium crude)	600	16,070
Moose dome (light crude)	600	2,266
Total	2,796,908	6,667,889

Turner Valley pipe line runs to the Imperial and British American companies at Calgary reached new high figures during the year, and the reduced figures in the concluding three months represent merely the effect of proration. With unrestricted production, it is estimated the field would be delivering 1,000,000 bbls. a month. Actual pipe line runs in 1937 and 1938 compared as follows:

	1937 (bbls.)	1938 (bbls.)
January	101,856	395,639
February	115,818	361,955
March	133,216	406,644
April	149,467	379,213
May	148,066	448,363
June	162,071	418,287
July	195,134	566,783
August	232,557	680,289
September	234,941	746,026
October	281,576	600,922
November	282,908	376,250
December	326,133	*380,500

*Estimated.

Throughout the year, Turner Valley crude production was subject to proration. At first this represented a percentage of potential, starting on January 1 at 35 per cent; increased on January 15 to 42 per cent. April 1 a six-day production week was made effective. Later percentages were: May 6, 44 per cent; June 1, 30 per cent; June 17, 37 per cent; August 15, 48 per cent; August 20, 51 per cent; August 27, 56 per cent.

With the appointment of a new conservation board headed by W. F. Knode, the policy was adopted of setting quotas for individual wells, based on gas-oil ratio, bottom-hole pressure, and allied factors. Effective September 2, the aggregate field quota was set at 28,363.8 bbls. a day, which was reduced on September 24 to 22,000 bbls., October 20 to 14,500 bbls. and October 28 to 11,500 bbls., and on December 5 increased to 12,500 bbls. The aggregate potential was estimated unofficially around 61,000 bbls. a day.

Extension of Field

At the end of 1937, Turner Valley listed 31 crude oil wells in the Madison limestone, as distinguished from naphtha wells and shallow crude producers. Apart from Model Oils' three wells in North Turner Valley, all crude production was from the west flank of South Turner Valley. In 1938 41 new wells were drilled, of which 39 were producers and two dry holes.

In general, these drilling operations have extended the field to the south and west. In the south, National Petroleum Corp. No. 2, LSD 14, Section 9-18-2w5, now the most southerly producer, encountered faulting in the lower lime but is a good producer from the upper porous zone. The year has been marked by deeper drilling west of the original producers, with a gradual cautious extension of the proven field. Two outpost wells were completed, however, a considerable distance west.

Okalta Deep Test

Of these wells, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, established a new deep drilling record for Canada of 10,209 feet, where it encountered salt water in the lower porous horizon of the Madison. It was, however, plugged back 185 feet and is testing the

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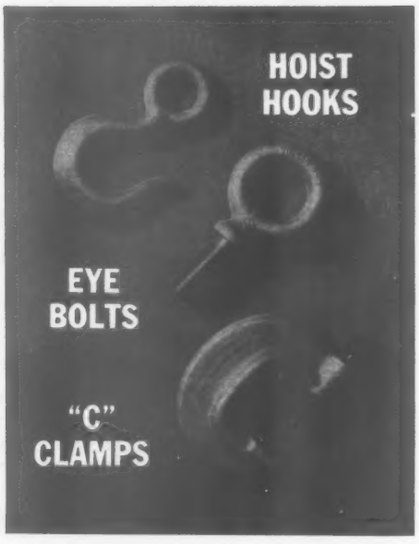

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upper porous zone, where a commercial production of light crude is indicated.

Nearer the proven area, Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, escaped the salt water and got a good producer in the lower Madison, indicating that the oil-water line in the lower Madison is somewhat farther west.

Extending Field to North

In the west-central area, the proven field has been extended into Section 5-19-2w5, which has encouraged wildcatting still farther in that direction.

More important still, the west flank crude area has been proven in North Turner Valley, first by the completion of Royalite No. 29, LSD 7, Section 27-20-3w5, as a good producer after acidizing, and toward the close of the year by Home Oil Co. No. 2 Millarville, LSD 3, Section 33-30-3w5, encountering a good production, estimated 600 bbls. a day natural flow, in the upper porous horizon of the Madison. This is probably the best production ever encountered in the upper lime, and, located approximately 12 miles northwest of the main Turner Valley crude area, indicates either an important new field or a yet more important extension of the existing field. It is deepening to the lower lime for a complete test.

Tests in the Foothills

Turner Valley activity early in the year led to a slackening of drilling efforts in the foothills. In the latter part of 1938, however, there was considerable new foothills activity. Of the newer wells, Petroleum Structures No. 1, LSD 4, Section 2-33-7w5, on the Bearberry structure northwest of Calgary, was abandoned at 5,216 feet, owing to faulting.

Wainwright-Ribstone Area

In the Wainwright field, Altoba No. 2, Section 35-47-7w4, got some oil at 2,311 feet and Pacalta Oils No. 1, on the Battleview structure, secured a gas flow, estimated at 3,000,000 feet a day, with indications of oil, at 2,409 feet. In the Ribstone area, Dina Oil & Refining Co. No. 4, LSD 13, Section 9-45-1w4, got a fair pumping production of heavy crude around 1,690 feet. Production was also reported in London-Ribstone Oils No. 2, LSD 5, Section 22-43-3w4, at 2,017 feet and in Blackfoot-Ribstone Oils No. 1, Section 28-43-2w4, at 2,034 feet. The Dina company is handling its own output in a local refinery.

Saskatchewan Operations

There has been considerable drilling in Saskatchewan, mostly with inconclusive results. In the Lloydminster field, Northern Utilities No. 1, LSD 1, Section 26-49-28w3, got a gas flow estimated at 8,000,000 feet; and Colony Oil & Gas Co. No. 3 at 1,690 feet had indications of commercial oil production. In the Vera-Unity area, Vera Oilfields No. 2 got a good show of crude around 2,120 feet and is deepening. Definite arrangements for marketing Saskatchewan gas are expected to encourage more systematic development work in several potential areas.

Warwick Shallow Field

The most important Ontario oil development of the year was the opening of a shallow oil field in Warwick Township, Lambton County. The discovery well, drilled by Bert Wilson and associates on the Loftus McLean farm, Lot 23, Concession 5, got a pumping production, estimated 28 bbls. a day flush, at around 480 feet. On the John Westgate farm, Lot 23, Concession 4, Albert Gibson No. 1 got similar initial production. Andrew Heal and Sam Birchall No. 1, Lot 27, Concession 5, got top show oil at 376 feet, starting at 110 bbls. a day. These discoveries were followed by widespread drilling which resulted in some dry holes toward the north and extended the producing area to the south and east. At the end of the year some 15 producers had been drilled, with three other wells testing; while there were nine dry holes. The field not having been opened till late in 1938, it is still too early to determine its full extent or its permanency; but its initial development marks it as the most promising shallow crude area since the Mosa field was opened in 1917.

A Sault Ste. Marie syndicate headed by I. L. Whitehead and Dr. S. H. Vegors has secured shallow crude production in three wells drilled on Manitoulin Island near Manitowaning. Production comes from the Trenton limestone at about 475 feet, and No. 3 well on the James Marshall farm, Assiginack Township, had a reported flush of 100 bbls. a day.

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Rocky Mountain Line Features 1938 Pipe Line Construction

The largest oil pipe line project in the Rocky Mountain area in 1938, and also one of the largest in the country, was the construction of a trunk line from the Lance Creek field in eastern Wyoming to Denver by the Rocky Mountain Pipe Line Co., in which the Continental Oil Co. owns a majority stock interest. The minority interest is owned by C. U. Bay, president of the Bay Petroleum Corp., and Fred Goodstein, of the Minnelusa Oil Corp.

Construction started August 22 and the line was completed and ready for operation on November 1. It consists of 136 miles of 25-29-pound 8-inch pipe from Lance Creek to Cheyenne and 96 miles of 17.02-pound 6-inch pipe from Cheyenne to Denver. The pipe order was divided equally between the National Tube Co. and the Republic Steel Corp. The S. D. Bechtel Co., of San Francisco, had the contract for the line from Lance Creek to Cheyenne and the Osage Construction Co., of Tulsa had the contract for the line from Cheyenne to Denver. The H. C. Price Co., of Bartlesville, had the contract for welding the line by the Fleetweld process. The plant includes three pumping stations, one in the field and the other two at Guernsey and Cheyenne, and a telephone system for the entire distance.

The capacity of the line is approximately 63,000 bbls. per day with a maximum present throughput of 10,000 bbls. per day. It is a common carrier and transports crude from the field to the Continental Oil Co. and Bay Petroleum Corp. refineries at Denver and the Bay refinery at Cheyenne. The Continental and Minnelusa Oil Corp. both have production in Lance Creek.

The next largest project was a 53-mile line from the Lance Creek field to the Continental Oil Co. refinery at Glenrock, Wyo. Construction began in August and was completed toward the end of October. It consists of 15 miles of 6-inch and 48 miles of 4-inch pipe. The Fredell Construction Co. had the contract on the 6-inch section and the Osage Construction Co. had the contract for the 4-inch section.

NEW MEXICO

Texas-New Mexico Pipe Line Co. laid 14 miles of 8-inch pipe from the Vacuum field, new and growing area in New Mexico, to a connection with a 4-mile line of 4-inch pipe in operation at Lynch station, 18 miles southwest of Vacuum, in March. It gave Vacuum field its first outlet.

The only gas pipe line construction of the year in the Rocky Mountain area consisted of a 53-mile 18-inch loop built by the Uinta Pipe Line Co. from Biglow Hille, 20 miles east of Evanston, Wyo., to Coalville, Utah, parallel to the trunk line serving Salt Lake City and Ogden. Contract went to the S. D. Bechtel Co., of San Francisco, for construction of the line and to the H. C. Price Co., of Bartlesville, for the welding. The line was built to augment the capacity of the system arising from the connecting up of the Clay Basin field in northeastern Utah with the main line in 1937. This connection is a 21-mile 10-inch line from the field to the main line.

OKLAHOMA

Pipe line construction in Oklahoma in 1938 was confined to three major projects. Early in the year Oklahoma Pipe Line Co. laid about 21 miles of 8-inch line to fill a gap in a loop in one of its Carter County lines, north of Ardmore. The Great Lakes Pipe Line Co. laid 55 miles of 6-inch, welded gasoline line from Ponca City to Barnsdall, in Osage County in September. The Cosden Pipe Line Co. laid 21 miles of 4-inch welded pipe line in December, from the Ramsey pool in Payne County to Cushing, where it was connected with the company's main Cushing-Drumright line serving the Mid-Continent refinery at Tulsa.

Wilcox Oil & Gas Co. constructed a 4-inch pipe line from the Sac and Fox field in Lincoln County to a connection with the Tidal pipe line near Milfay, in Creek County, a distance of about 6 miles.

KANSAS

Little actual pipe line construction was reported in Kansas in 1938, although proposals were announced for two major projects. In July Derby Oil Co. completed a 4-inch line from its station in the Robbins pool, south of Wichita, to the Wellington pool in Sumner County, a distance of 20 miles. Later in the year, Texas-Empire Pipe Line Co. laid 7 miles of new line from Oak Hill to Valley Center in Butler County, replacing a 12-inch crude line. The new line included 5 miles of 10-inch and 2 miles of 12-inch pipe. The Kansas Pipe Line & Gas Co. applied for authority under the natural gas act to lay a gas pipe line from the Hugoton field, across western Kansas, Nebraska and South Dakota to the Mesaba iron region in Minnesota, and a loan of $20,000,000 has been applied for from the Reconstruction Finance Corp. The line would include 1,040 miles of main line and 1,306 miles of tap lines. Coal interests were opposing the project and the matter still was before the federal commission at the end of the year. The other major project was announced by Kansas Industrial Gas Co., a proposed gas line from Hugoton to southeastern Kansas counties and Kansas City, but work had not begun as the year ended.

A 4-inch line lateral was laid by Derby Oil Co. from its Bell station in the Burrton pool, to the new Buhler area in northeastern Reno County, a distance of 6½ miles, in April.

PIPE LINE WORK IN TEXAS

The longest pipe line project completed in the Gulf Coast and Southwest Texas area, was the construction of a 48-mile combination 10-, 12- and 16-inch welded gas line by United Gas Pipe Line Co. from the Katy gas field in Waller County, to the company's distributing plant about 10 miles north of Clinton in Harris. The line ties into the Fairbanks and Satsuma fields, several miles northwest of Houston.

Republic Production Co. completed 18 miles of 6-inch welded oil line from the Bancroft field in Beauregard Parish, coastal Louisiana to the Texas Pipe Line Co. Bunkie Hill pump station on the Texas side of the Sabine River.

Humble Pipe Line Co. completed 20 miles of 4-inch welded oil line from the Fitzsimmons field in Duval County, which ties into the company's pump station at Benavides.

San Diego Pipe Line Co. and H. J. Porter laid a short welded 4-inch pipe line from the Fitzsimmons field, Duval County, to a loading rack at San Diego.

Union Sulphur Co. completed 12½ miles of 6-inch welded oil line from the Woodlawn field, Jefferson Davis Parish, coastal Louisiana to the company's tank farm and loading rack at Gillis on the Calcasieu River.

Continental Oil Co. completed a 12,000 bbls. capacity, 35-mile 6-inch welded oil line from the Villa Platte field in Evangeline Parish to the Tepetate field in Acadia Parish, Louisiana, connecting the field with terminal facilities at Lake Charles.

Shell Petroleum Corp. laid a short 4-inch oil line from the Jennings field, Acadia Parish to a connection with its Iowa-Roanoke line to Lake Charles.

Texas Pipe Line Co. completed 9 miles of 6-inch oil line from the West Columbia field to the Old Ocean field in Brazoria County.

Humble Pipe Line Co. laid 4,500 feet of 8-inch pipe from Mesquite Point in Chambers County to the Cedar Point field in Galveston Bay.

A 6-mile gas line was laid from the Santo Domingo gas area in southeastern Starr County, Tex., to the western terminus of Hidalgo Gas Co. system.

Survey and right of way plans for a 250-mile 12-inch oil line from Texas Co., Terrebonne Bay group of fields in southeastern Terrebonne Parish, was made by the Texas Pipe Line Co. The proposed line extends to Texas Co. refinery at Port Arthur. It is doubtful if this line will be constructed.

ILLINOIS

Owensboro Pipe Line Co. laid a 6-inch carrier to the Centralia field in June for Standard Oil Co. of Ohio, replacing its small line from Sandoval to Centralia.

Late in July Texas Co. announced construction of 9 miles of 4-inch line from the Salem field to the Illinois Pipe Line Co. main line near Sandoval, giving first pipe line outlet to the new wells in the Salem area.

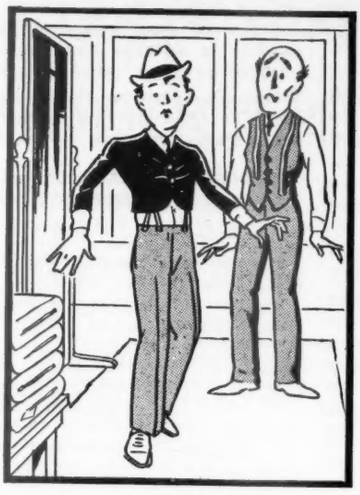
Oklahoma Pipe Line Co., Carter Oil Co. affiliate, let contract late in July for about 9 miles of 6-inch line from Brownstown station in Fayette County, and 6 miles of 8-inch line, the two systems being joined to serve the new Louden field. Connection was made at Brownstone with the Illinois Pipe Line Co. system. The gathering system was expanded during the year to serve the rapidly expanding field.

Central States Pipe Line Co., a Texas Co. subsidiary, started work in October on 35 miles of 10-inch and 38 miles of 8-inch pipe line, running from the Salem field eastward to the Indian Refining Co. plant at Lawrenceville, a distance of 73 miles. The job was completed and put into operation. In December, the Central States company announced contract had been let for a 19-mile 6-inch line from Boyleston in Wayne County northeastward to a junction with the new Salem-Lawrenceville line.

Manly Oil Co. completed 13 miles of 4-inch line in December, running from the Salem field to the Big Basin refinery at Centralia. When gathering lines are completed, the system will be about 20 miles long.

CALIFORNIA PIPE LINE WORK

Very little pipe line construction was undertaken in California during the past year at the new fields discovered. Coles Levee, Tupman and Wasco in Kern County and Southeast Coalinga in Fresno County, were close to trunk lines. Not over 5 miles of new line was required in any instance to make connections with main trunks or feeder lines. Tupman and Coles Levee fields were discovered November 27 and November 11, respectively, and thus crude oil disposition has been relatively simple up to the present as only one well has been completed in each instance. In the Wasco field only two wells were completed in 1938. Production of crude oil from the Aliso Canyon field, located in the Newhall section of Los Angeles Basin, was trucked out, as only the discovery well, which was completed October 25, produced any crude oil. Several small gathering lines were laid in the Harbor City area about 1 mile south of the Lomita section of the Torrance field and a few short connections were made in the Long Beach Harbor section of the Wilmington field, which is located adjacent to the refineries of most marketers and close to marine loading wharves at tidewater. Early in 1938, Petrol Corp. constructed a submarine loading line in the Estero Bay area of San Luis Obispo County and this installation has been in use for the greater part of the year. Crude oil from Santa Maria Valley and Gato Ridge fields is trucked from the producing



Don't cut the coat to fit the cloth....

FIT THE METHOD TO THE JOB

Fig. 524 Fig. 511

WHATEVER a man's work, if he is wise he will choose equipment suitable for the task and the circumstances. Take earth moving, for example. Hand shovel, pickax, power tools, dynamite—which would you employ? That depends on the nature of the job.

So with drilling. Cable tools may give best results in one place, rotary equipment in another. Where is your property? Where are the water sources? What is your transportation? How deep do you expect to go, and through what formations? Are you in a hurry? Why?

The most economical method, in the relation of total costs to total yield, is what you want for each operation. Both approved methods may often be combined to advantage. Analyze your undertaking—then decide. Whatever system you adopt, reliable equipment and a capable crew are necessary.

Cable-system drilling is economical only with good equipment, properly maintained. Spang Cable Tools are the standard of comparison for good tools the world over. Specify them.

SPANG CABLE TOOLS

The HIGHER STANDARD

SPANG AND COMPANY, BUTLER, PA.

properties to receiving tanks at Estero and loaded by gravity, after heating, to tankers lying off shore.

NATURAL GAS LINES

No major natural gas lines were undertaken in California during 1938, but several minor installations were completed. The Texas Co. laid a 5-mile 10-inch wet gas line from the west end of the Montebello field to its natural gasoline plant and a parallel 10-inch line to return the dry gas to the point of origin for use under the boilers of wells being drilled. Short gathering lines were also laid in the Rosecrans, Potrero, Torrance, Harbor City and Wilmington fields principally to make connection with existing natural gasoline plants. In the northern part of the state, Pacific Gas & Electric Co. laid a short line into the Sutter's Buttes area and this dry natural gas has been turned into the distributing system of the company serving Chico, Oroville, Gridley, Yuba City and Marysville. Early in 1939 this line is scheduled to be extended to the pottery plant of Gladding-McBean Co., which will greatly augment the demand. The artificial gas plant at Marysville has been shut down and will be used only as a standby unit.

NORTH LOUISIANA-ARKANSAS

Pipe line construction during 1938 in North Louisiana and Arkansas consisted in the laying of a few short lines connecting to new production. The Arkansas-Louisiana Gas Co. laid 18 miles of gas line from its system to the Schuler field of Union County, South Arkansas, to furnish that field with gas for drilling purposes. Late in the year Grady Vaughn was laying a 2¾-mile spur of 4-inch welded line from a gathering system in the Magnolia field of Columbia County to the Stephens-Haynesville trunk line of the Arkana Transit Corp.

In North Louisiana, the Atlas Pipe Line Corp. gave the Shreveport field of Caddo Parish its first outlet in a 6-inch, 4-mile line to its plant in the Shreveport area. The company also laid 12 miles of 6-inch line from its Gillark station to the Cotton Valley field, and sold its 6-inch, 12-mile line from its North Louisiana system to the Sligo field of Bossier Parish, to the Triangle Drilling Co.

The Standard Oil Co. of Louisiana installed a gathering system consisting of 10.6 miles of 4-inch and 5.5 miles of 2-inch connecting production in the Cotton Valley field to its Weller station. The Grogan Oil Co. interests laid an outlet for production in the Shreveport field, in a 1¼-mile, 4-inch spur from the field to the Gas Center storage farm of the Arkansas Fuel Oil Co., from which the oil is moved through the Arkansas lines to the refinery of the Rodessa Oil & Refining Co.

Federal Natural Gas Law Chief Development During 1938

The extension of federal control into the natural gas industry under the Natural Gas Act was the chief development in 1938. The Federal Power Commission, the enforcement agency charged with administration under the act, promptly issued three orders, one a questionnaire amounting to a general investigation of the industry, and the others calling for filing of schedules, contracts and rates by all companies.

In an address before the American Gas Association at its annual meeting in October, Joseph E. Pogue estimated known proven reserves of natural gas in the United States to be in the neighborhood of 60,000,000,000,000 to 75,000,000,000,000 cu. ft., or, say, 25 to 30 years' supply at the current rate of consumption.

Conrad N. Lauer, president of the American Gas Association, reports that the year 1938 was one of continued progress and expansion for the gas industry. Manufactured and natural gas utilities, supplying towns and cities with a population of 81,000,000, served a total of 17,135,000 customers, representing the largest number of consumers ever connected to the mains of the industry, and an increase of 180,000 over 1937.

Preliminary estimates indicate that revenues of the entire industry, both manufactured and natural, aggregated $786,576,000 in 1938, a decrease of 1.8 per cent from the preceding year. The manufactured gas companies grossed $367,714,000, a gain of 2.2 per cent for the year, while revenues of natural gas companies were $418,862,000, compared with $441,232,000 in 1937, a decrease of 5.1 per cent.

Sales of manufactured gas for domestic uses other than house heating, such as cooking, refrigeration, water heating, etc., amounted to 198,331,000,000 cu. ft., an increase of 1.5 per cent for the year. The gain in house heating sales amounted to 10 per cent. This doubtless would have been larger except for the mild temperatures that prevailed throughout the year in most sections of the country. For somewhat the same reason, the sales of natural gas for domestic uses, which are influenced to a considerable extent by temperature variations, registered a decrease, falling from 359,294,000,000 cu. ft. in 1937 to 350,143,000,000 cu. ft. in 1938, a loss of 2.5 per cent.

Preliminary estimates indicate that the total production of natural gas in 1938, including amounts used in the manufacture of carbon black and for field purposes, reached an all-time high of more than 2,500,000,000,000 cu. ft., or more than 2 per cent above the previous peak established in 1937. Approximately 173,000,000,000 cu. ft. of natural gas were used as fuel for generating electric power in 1938. This was an increase of nearly 2 per cent over the previous year.

The past two years have been characterized by an increasing appreciation of the great potential market for domestic water heating. There has been a widespread adoption of rates more favorable to the use of gas for this domestic purpose, with the result that more than 680,000 gas water heaters were sold during 1938, and even better results are anticipated from the program of sales promotional efforts to be continued during 1939.

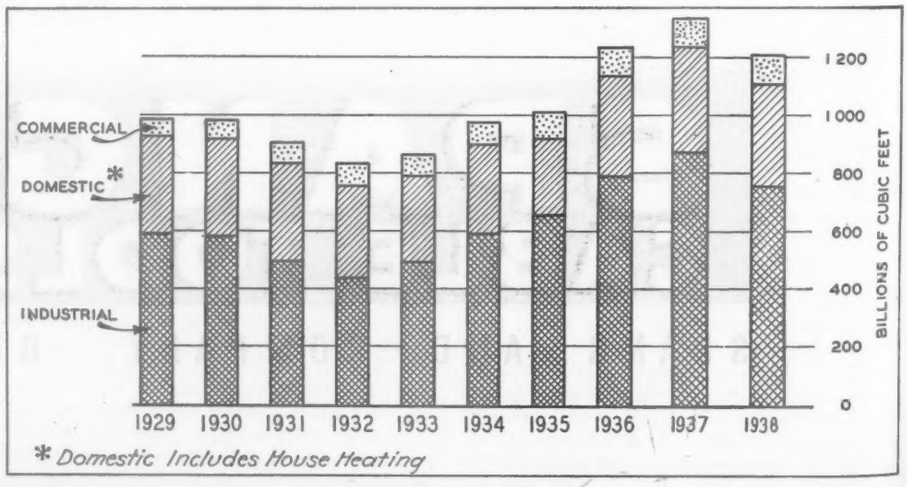
Gas companies have continued to inaugurate more favorable rates for house heating through central plant burners and equipment. It is estimated that the total number of gas central house heating installations connected to the lines of all United States gas companies in 1938 amounted to 825,000. In addition there were approximately 1,400,000 dwellings heated by unit heaters, space heaters, floor furnaces, etc., giving a total of more than 2,225,000 homes in the United States that are heated by gas.

PRELIMINARY ESTIMATES ON THE NATURAL GAS INDUSTRY FOR 1938

Customers—	1938	1937	Per cent change
Domestic (including house heating)	6,596,000	6,465,000	+ 2.0
Commercial	510,000	501,000	+ 1.8
Industrial	41,000	40,000	+ 2.5
Total	7,147,000	7,006,000	+ 2.0
Gas sales (M.C.F.)—			
Domestic (including house heating)	350,143,000	359,294,000	— 2.5
Commercial	99,459,000	102,654,000	— 3.1
Industrial	581,451,000	681,978,000	—14.7
Electric generation	172,500,000	170,567,000	+ 1.1
Total, industrial and electric generation	753,951,000	852,545,000	—11.6
Total	1,203,553,000	1,314,493,000	— 8.4
Revenue (dollars)—			
Domestic (including house heating	244,063,000	246,546,000	— 1.0
Commercial	47,381,000	48,152,000	— 1.6
Industrial and electric generation	127,418,000	146,534,000	—13.0
Total	418,862,000	441,232,000	— 5.1

The most important gas discovery of the year was made in Lawrence County, Illinois, where wells as large as 30,000,000 cu. ft. daily were completed.

Notable developments within the natural gas industry during 1938 were the steps taken for merging Columbia Natural Gas Co. and the Peoples Natural Gas Co. operating in western Pennsylvania; inquiry by the Public Utilities Commission of Pennsylvania into the rates of eight companies in western Pennsylvania; upholding of a rate increase in Chicago; discovery of a 250,000,000 cu. ft. well in the Eunice field, New Mexico; Lone Star Co. divestment of Council Bluff Gas Co.; Hope Natural Co. denial of complaint by city of Cleveland on rates paid by East Ohio Gas Co.; upholding of five-year-old rate increase by Pacific Gas & Electric Co.; antitrust suit by the Department of Justice against Columbia Gas & Electrict Corp.; proposal to divest Columbia of control of Panhandle Eastern Pipe Line Co.; investigation of Denver rates on complaint by city filed with Federal Power Commission which of its own motion began investigation of the charges made by Natural Gas Pipe Line Co. and Texoma Natural Gas Co. affecting rates in Chicago.



Natural gas sales

Annual Review

MICHIGAN ESTABLISHED NEW RECORD IN PRODUCTION; 7 NEW POOLS

By O. C. PRESSPRICH

All Michigan oil production records toppled in 1938, including a monthly record which had stood since October, 1935, while seven new fields discovered since midsummer, five of them in southwestern Michigan, built up potential reserves and indicated steady development in 1939, hampered only by market weakness.

The only blot appearing on the Michigan oil picture for 1939 is what the future may hold for Michigan oil producers in crude oil prices. Skidding prices resulting from flush production in one of the state's new pools tobogganed the price scale in several successive cuts more than 40 cents a barrel (in some fields) within a six-month period. What the future holds is dubious, though independent operators pointed to conservation measures to be introduced in the 1939 Michigan legislature as a possible means of stabilizing crude markets in state fields.

Michigan oil production in 1938 totaled 17,697,000 bbls. for a new high, with May setting a new single month production record at 1,762,381 bbls., or 56,851 bbls. per day. The old record, established in October, 1935, was 1,742,030 bbls., or 56,195 bbls. per day.

The past year also set a record for the addition of the largest number of new pools, seven having been added. One of the new pools—Freeman and Redding in Clare County—gave promising indication of rivaling the famous Buckeye field, a 1936 discovery, which consistently has led all Michigan production and still is the ranking pool in the state. The Freeman-Redding pool, discovered in July, had 40 producing wells on December 20, with average daily runs of 9,500 bbls. under a voluntary proration curb due to limited pipe line facilities. The curb allowed a take of about 400 bbls. per well daily. In estimated reserves the Clare County field looms as the most significant development, with an estimated 8,000,000 bbls. reserve.

Outstanding as the fastest growing field, in Michigan in 1938 was the Bloomingdale pool in Van Buren County. Discovered July 18, the field had 62 wells on December 1, and more than 50 locations staked, drilling or under permit to drill. Production on December 1 showed an average of 6,200 bbls. daily.

Five of the seven new Michigan pools in 1938 were in the southwest corner of the state. They are Bloomingdale in Van Buren County; Dorr, Monterey, Diamond Springs and Overisel, all in Allegan County. Besides the Clare County field in Central Michigan, the other 1938 discovery was in Edenville Township, of Midland County.

Spectacular Discoveries

Discoveries in 1938 were more spectacular than any since the boom days of the Saginaw field discovery in 1925. The first new pool opened in 1938 in Southwest Michigan was the Monterey pool in Allegan County, discovered February 12, attracting renewed interest to

(Continued on Page 176)

MICHIGAN

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
PORTER-YOST:													
Daily average	8,104	8,304	7,670	7,605	7,683	7,619	7,347	7,232	6,902	6,678	6,228	6,106	
Month	251,224	232,512	237,770	228,150	238,173	228,570	227,757	224,192	207,060	207,018	186,840	189,286	2,658,552
GREENDALE-CHIPPEWA:													
Daily average	1,600	1,687	1,901	1,934	1,952	1,922	1,813	1,806	1,786	1,559	1,647	1,598	
Month	49,600	47,236	58,931	58,020	60,512	57,660	56,203	55,986	53,580	48,329	49,410	49,538	645,005
GENEVA-MIDLAND:													
Daily average	26	27	15	29	27	24	20	13	9	30	18	18	
Month	806	756	465	870	837	720	620	403	270	930	540	558	7,775
EDENVILLE-MIDLAND:													
Daily average	.....	120	275	981	1,628	3,128	2,749	2,486	2,520	2,153	1,769	1,716	
Month	.....	3,360	8,525	29,430	50,468	93,840	85,219	77,066	75,600	66,743	53,070	53,196	596,517
VERNON-LEATON-DENVER:													
Daily average	1,592	1,544	1,255	1,360	1,276	1,187	1,068	1,086	1,056	962	936	907	
Month	49,352	43,232	38,905	40,800	39,556	35,610	33,108	33,666	31,680	29,822	28,080	28,117	431,928
SHERMAN-ISABELLA:													
Daily average	4,928	4,457	4,298	3,593	2,921	2,602	2,746	2,733	2,583	2,969	2,300	2,294	
Month	152,768	124,796	133,238	107,790	90,551	78,060	85,126	84,723	77,490	92,039	69,000	71,114	1,166,695
MONTCALM COUNTY:													
Daily average	896	926	872	853	693	853	728	725	640	617	595	571	
Month	27,776	25,928	27,032	25,590	21,483	25,590	22,568	22,475	19,200	19,127	17,850	17,701	272,320
BEAVERTON:													
Daily average	252	272	284	259	234	240	123	241	234	217	203	202	
Month	7,812	7,616	8,804	7,770	7,254	7,200	3,813	7,471	7,020	6,727	6,090	6,262	83,839
BENTLEY-GLADWIN:													
Daily average	238	261	367	635	634	682	733	761	756	681	658	649	
Month	7,378	7,308	11,377	19,050	19,654	20,460	22,723	23,591	22,680	21,111	19,740	20,119	215,191
BUCKEYE-WICKLUND-OARD:													
Daily average	26,628	26,694	25,811	27,361	24,116	21,577	19,472	17,510	16,441	13,508	11,947	11,000	
Month	825,468	747,432	800,141	820,830	747,596	647,310	603,632	542,810	493,230	418,748	358,410	341,000	7,346,607
SECORD-GLADWIN:													
Daily average	14	7	21	58	20	7	26	3	5	22	23	20	
Month	434	196	651	1,740	620	210	806	93	150	682	690	620	6,892
OGEMAW:													
Daily average	2,709	2,784	3,488	2,821	2,878	3,295	3,336	2,612	3,226	3,091	2,658	2,592	
Month	83,979	77,952	108,128	84,630	89,218	98,850	103,416	80,972	96,780	95,821	79,740	80,352	1,079,838
ADAMS-ARENAC:													
Daily average	134	185	126	118	224	166	131	160	112	151	147	141	
Month	4,154	5,180	3,906	3,540	6,944	4,980	4,061	4,960	3,360	4,681	4,410	4,371	54,547
CLAYTON-ARENAC:													
Daily average	398	1,354	2,091	2,922	6,982	5,652	3,906	3,318	3,142	2,891	3,029	3,010	
Month	12,338	37,912	64,821	87,660	216,442	169,560	121,086	102,858	94,260	89,621	90,870	93,310	1,180,738
SAGINAW-HEMLOCK:													
Daily average	42	46	28	28	57	54	83	63	61	77	53	50	
Month	1,302	1,288	868	840	1,767	1,620	2,573	1,953	1,830	2,387	1,590	1,550	19,568
BIRCH RUN:													
Daily average	67	67	64	56	52	58	49	49	55	47	48	46	
Month	2,077	1,876	1,984	1,680	1,612	1,740	1,519	1,519	1,650	1,457	1,440	1,426	19,980
DUNDEE-MONROE:													
Daily average	24	25	22	22	19	19	19	19	19	20	16	15	
Month	744	700	682	660	589	570	589	589	570	620	480	465	7,258
ALLEGAN-VAN BUREN AREA:													
Daily average	3,596	4,582	3,630	5,531	5,250	3,591	4,184	7,652	8,640	7,808	12,922	11,519	
Month	111,476	128,296	112,530	165,930	162,750	107,730	129,704	237,212	259,200	242,048	387,660	357,089	2,401,625
MUSKEGON:													
Daily average	80	135	148	128	169	145	136	82	114	105	137	135	
Month	2,480	3,780	4,588	3,840	5,239	4,350	4,216	2,542	3,420	3,255	4,110	4,185	46,005
FREMONT-ISABELLA:													
Daily average	.....	.....	.....	.....	36	26	15	13	.....	1	.....	.....	
Month	.....	.....	.....	.....	1,116	780	465	403	.....	31	.....	.....	2,795
GRANT-CLARE:													
Daily average	.....	.....	.....	.....	.....	.....	.....	.....	14	22	5	5	
Month	.....	.....	.....	.....	.....	.....	.....	.....	420	682	150	155	1,407
WISE-ISABELLA:													
Daily average	.....	.....	.....	.....	.....	.....	.....	18	34	44	67	100	
Month	.....	.....	.....	.....	.....	.....	.....	558	1,020	1,364	2,010	3,100	8,052
TUSCOLA:													
Daily average	.....	.....	.....	.....	.....	.....	.....	14	29	22	13	40	
Month	.....	.....	.....	.....	.....	.....	.....	434	870	682	390	1,240	3,616
FREEMAN-TEMPLE:													
Daily average	.....	.....	.....	.....	.....	.....	123	596	5,224	7,498	8,463	6,995	
Month	.....	.....	.....	.....	.....	.....	3,813	18,476	156,720	232,438	253,890	216,845	882,182
Daily average	51,328	53,477	52,366	56,294	56,851	52,847	48,807	49,192	53,602	51,173	53,882	49,729	
Total 1938	1,591,168	1,497,356	1,623,346	1,688,820	1,762,381	1,585,410	1,513,017	1,524,952	1,608,060	1,586,363	1,616,460	1,541,599	19,138,932
Total 1937	903,347	885,532	1,219,911	1,345,791	1,310,048	1,270,254	1,365,117	1,606,300	1,602,410	1,737,826	1,571,600	1,592,615	16,410,751

Annual Review

MORE DISCOVERIES IN FRESNO, KERN AND LOS ANGELES COUNTIES

By L. P. STOCKMAN

A production of crude oil far in excess of demand, resulting from exploitation of new fields and aggressive development in older areas, a substantial accumulation of stocks, abnormally large offshore shipments of crude and refined oil to foreign and domestic ports, a rejuvenated curtailment and proration program and a general weakening in refined oil prices characterized developments in California during 1938. State crude-oil production was the third highest ever reached, being exceeded only by the peak production of 722,545 bbls. per day during 1923 and that of 800,101 bbls. in 1929.

A minimum of 150,000,000 bbls. was added to reserves as a result of discoveries at Southeast Coalinga in Fresno County; Canfield Ranch, Coles Levee, Tupman, and Wasco in Kern County, and Aliso Canyon in Los Angeles County, together with deeper drilling and extension work in the Rio Bravo, Greeley and Canal fields of Kern County; Wilmington, Montebello, Rosecrans, Torrance, and Long Beach fields of Los Angeles Basin; and Rincon, San Miguelito, and Ventura Avenue fields of Ventura County.

With the exception of Santa Maria Valley field, where a reduction of 25 cents per barrel reduced the posted price to 45 cents per barrel for 16-gravity oil on May 20, a restoration of the original Santa Maria Valley price schedule on October 15, 1938, and an upward adjustment of crude oil prices on July 9 in the Greeley and Canal fields occasioned by a change in the quality of oil produced, the crude-oil price structure remained unchanged during the year.

Fuel oil and Diesel prices were reduced 10 cents per barrel, respectively, at all Pacific Coast points on May 10, and on October 17 tank-truck prices of burner oil and stove oil were reduced from one-quarter to three-quarters cent per gallon. Late in December, 1937, fuel-oil prices had been reduced 10 cents per barrel at Los Angeles and San Francisco and 15 cents per barrel in the San Joaquin Valley, due to excessive crude oil production in the face of a severe decline in demand.

No change was made during 1938 in the official posted price of gasoline, but the allowance of increased differentials to resellers and unrestricted allowance of discounts and rebates in the retail market and a general softening in the spot market resulted in a lower net-back to the refiners. Attempts to secure compliance with the California Fair Trade Act and force resellers to discontinue selling standard brands of gasoline below posted prices met with little lasting success.

Two attempts were made during 1938 to reduce crude production, but no appreciable progress was made until December 13, when the Oil Producers Agency of California, San Joaquin Valley Oil Producers Association, and Independent Oil Producers Agency jointly endeavored to bring production down to 600,000 bbls. per day. As a result, production was reduced approximately 50,000 bbls. per day by the end of the year, with maximum effectivness expected within 30 days. Abnormal shipments to foreign ports, principally to Japan and the Orient, alleviated conditions to some extent during 1938, but this bogged down temporarily in June and July, due to difficulties in securing Japanese letters of credit. The situation was subsequently adjusted, but in the meantime contracts had been signed between Japanese buyers and the Mexican Government, and the former immediately shifted into the Mexican trade a number of vessels that had formerly operated between California and Japan. The movement of Mexican oil to Japan did not become a factor of importance during 1938, and it is questionable whether future liftings will exert any great effect on California exports. Preliminary indications point to a smaller export business to Japan during 1937, due to decreased military activities in the Orient and the badly demoralized commercial activities in Japan, necessitating rationing of gasoline, and restriction of general business, subordinated to military activities.

The most important discovery in California was in the Southeast Coalinga area of Fresno County, where Petroleum Securities Co. completed No. 2 Gatchell in Section 18-20-16, flowing 9,000 bbls. of 32.2-gravity oil and 10,000,000 feet of gas per day from the Avenal zone of Eocene age. This discovery well is on the Gatchell

(Continued on Page 165)

CALIFORNIA CRUDE OIL PRODUCTION—JANUARY-DECEMBER, 1938, INCLUSIVE

(Barrels of 42 U. S. gallons)

Northern fields—	January	February	March	April	May	June	July	August	September	October	November	December	Ttl. 1938
Belridge—North	483,012	423,447	469,447	475,300	380,174	362,350	359,672	369,500	376,578	393,625	374,938	401,295	4,869,338
Belridge—South	48,103	45,319	45,433	35,239	32,253	32,271	32,031	33,170	33,568	34,014	34,048	31,961	437,410
Canal	14,414	36,684	38,840	55,672	56,713	67,656	75,682	86,809	85,630	104,006	106,363	118,978	847,447
Canfield Ranch	715	3,473	4,963	4,154	3,911	2,854	3,318	2,870	2,935	2,916	1,731	1,721	35,561
Coalinga	461,627	312,146	354,136	393,880	310,741	305,184	308,884	306,210	328,198	276,556	243,723	302,095	3,903,380
Coles Levee	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,795	5,612	10,407
Edison	113,413	103,828	120,983	106,114	89,632	87,603	83,418	82,122	76,666	82,729	77,880	78,368	1,102,756
Elk Hills	339,016	309,340	344,725	333,596	335,147	319,266	326,768	326,423	312,319	318,992	306,707	313,472	3,885,771
Fruitvale	298,806	260,672	278,083	277,788	286,886	265,580	234,122	241,985	232,278	240,134	233,508	238,390	3,088,232
Greeley	114,089	102,926	102,107	99,114	107,661	124,190	102,014	92,810	90,005	87,920	72,578	69,293	1,164,707
Kern River	457,947	412,124	439,265	400,435	395,741	365,114	357,959	354,347	360,938	356,474	338,418	355,260	4,594,022
Kettleman Middle dome	2,529	2,253	2,212	1,791	1,686	1,510	1,532	1,362	1,188	1,118	1,141	1,240	19,562
Kettleman North dome	2,521,918	2,251,647	2,550,181	2,428,724	2,218,542	2,029,565	2,057,265	2,006,601	1,904,033	1,927,667	1,837,901	1,854,854	25,588,898
Lost Hills	112,738	103,476	120,161	114,898	113,343	107,301	114,931	105,102	104,470	104,012	97,647	99,510	1,297,589
McKittrick	131,816	120,889	116,760	114,094	102,286	90,930	97,063	102,694	100,861	97,413	106,107	109,120	1,290,033
Midway-Sunset	2,340,266	2,083,034	2,192,580	1,978,044	1,962,987	1,778,094	1,829,450	1,818,072	1,719,944	1,747,828	1,665,222	1,753,794	22,869,315
Mountain View	433,010	378,323	390,840	366,317	374,635	344,618	307,056	295,944	290,860	285,914	278,950	287,990	4,034,457
Mount Poso	631,900	572,964	613,463	582,585	596,426	521,077	488,556	468,356	444,317	462,846	424,336	427,242	6,234,068
Rio Bravo	80,037	46,827	31,066	93,703	100,740	129,567	174,841	249,807	244,558	235,546	291,128	262,012	1,939,832
Round Mountain	564,220	485,524	529,906	501,934	487,867	434,386	451,485	428,034	405,476	403,958	384,484	407,030	5,484,304
Ten Section	120,492	128,178	162,337	184,635	184,397	198,294	215,425	233,824	246,553	264,458	263,895	270,196	2,472,684
Tupman	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,668	.....	1,668
Wasco	.....	.....	.....	11,674	20,638	11,730	11,946	12,364	11,299	11,691	14,110	19,716	125,168
Wheeler Ridge	9,711	8,757	9,564	9,407	9,559	9,203	9,574	9,605	9,294	9,483	9,355	9,579	113,091
Coastal fields—													
Capitan	95,932	84,626	96,594	92,049	88,573	85,585	86,922	83,623	86,911	92,291	86,388	89,125	1,068,619
Elwood	237,578	215,509	222,522	198,341	209,475	200,007	179,212	169,646	157,085	158,902	150,062	151,156	2,249,495
Rincon	98,879	100,896	116,888	114,814	138,586	121,286	134,875	113,739	105,444	106,114	124,227	118,203	1,393,951
San Miguelito	126,013	116,401	93,231	88,963	85,819	75,448	74,367	72,846	68,853	87,376	77,550	77,035	1,043,902
Santa Barbara	16,207	14,065	15,621	13,246	14,059	12,663	12,558	13,750	11,390	11,926	11,843	10,943	158,271
Santa Maria	491,347	437,036	537,220	534,164	433,920	464,742	369,685	640,724	587,389	570,391	577,585	501,394	6,145,597
Summerland	992	911	990	872	1,078	1,115	869	801	953	1,416	963	992	11,952
Ventura Avenue	1,126,450	1,035,687	1,145,178	1,113,419	1,122,947	1,062,964	1,088,926	1,069,089	1,027,135	1,064,298	1,018,298	1,053,349	12,927,740
Ventura-Newhall	163,576	155,020	144,365	155,094	154,479	146,122	156,602	168,811	159,404	170,477	166,309	167,276	1,907,535
Watsonville	1,860	1,400	1,550	1,200	1,240	1,200	1,085	930	900	930	900	930	14,125
Southern fields—													
Brea Olinda	190,681	175,533	188,531	177,711	177,387	170,744	180,346	174,903	167,935	176,859	169,799	172,794	2,123,223
Coyote—East	125,649	111,725	117,759	106,816	110,120	105,441	105,818	103,773	98,659	100,943	91,905	86,118	1,264,726
Coyote—West	293,415	226,672	260,951	269,935	275,699	262,306	262,877	255,049	243,158	247,970	239,166	247,070	3,084,268
Dominguez	935,937	821,012	894,549	802,133	840,169	800,648	736,939	788,013	751,755	807,889	820,025	761,391	9,760,460
El Segundo	602,955	467,914	495,649	432,553	341,815	292,525	292,375	244,953	194,971	182,350	168,723	170,376	3,887,159
Huntington Beach	1,069,843	973,248	1,061,246	1,025,814	1,027,767	971,225	1,001,410	987,087	936,244	979,585	933,060	968,192	11,934,721
Inglewood	497,434	448,461	500,535	477,744	460,043	442,084	439,544	438,032	412,568	418,458	401,997	403,124	5,340,024
Lawndale	3,010	2,520	2,140	2,139	2,868	2,379	2,798	2,485	1,931	2,176	2,070	2,139	28,655
Long Beach	1,768,254	1,611,387	1,762,249	1,745,518	1,800,062	1,756,288	1,801,768	1,764,928	1,678,908	1,690,985	1,607,989	1,666,281	20,654,617
Los Angeles-Salt Lake	17,836	15,295	17,355	16,612	16,245	17,323	16,821	13,596	17,087	17,750	15,445	15,612	196,977
Montebello	254,983	238,862	251,466	256,536	330,958	331,096	332,304	366,484	371,816	437,608	467,147	512,275	4,151,535
Playa Del Rey	226,645	200,813	208,016	202,888	208,055	189,371	190,285	182,127	171,819	183,944	169,676	170,128	2,303,767
Potrero	11,804	11,105	9,113	12,478	14,037	25,567	24,861	21,463	20,331	18,610	19,024	25,234	213,627
Richfield	302,891	278,368	294,105	290,227	282,293	277,136	277,742	279,007	264,601	270,596	261,908	270,940	3,349,814
Rosecrans	172,279	178,139	184,700	207,144	211,119	239,565	324,925	420,632	427,438	434,508	471,076	452,042	3,723,567
Santa Fe Springs	1,260,635	1,136,333	1,208,879	1,118,957	1,123,630	1,011,914	1,018,023	1,013,967	946,088	938,756	918,475	938,091	12,633,748
Seal Beach	295,805	274,245	297,473	284,270	273,218	267,186	268,172	260,975	243,550	249,590	241,264	250,387	3,206,135
Torrance	238,824	224,350	246,174	288,198	364,116	425,388	501,949	533,178	586,273	619,685	579,094	594,115	5,201,344
Whittier	27,779	25,808	27,635	28,345	28,799	28,151	28,687	29,031	28,724	28,277	28,055	29,016	338,307
Wilmington	2,072,963	2,832,563	3,121,557	3,020,152	3,036,409	2,794,505	2,937,807	2,928,207	2,770,669	2,903,218	2,893,332	2,891,060	34,202,442
Total	22,008,235	20,607,735	22,441,293	21,647,430	21,346,950	20,170,317	20,493,544	20,769,860	19,921,957	20,423,178	19,883,988	20,215,516	249,930,003
Daily average 1938	709,943	735,991	723,913	721,581	688,611	672,343	661,082	669,995	664,065	658,812	662,800	648,855	684,463
Daily average 1937	581,666	589,837	594,445	627,201	656,951	663,796	663,736	673,422	685,184	694,481	701,988	704,970	653,481
Daily average 1936	680,097	587,428	565,839	572,671	576,643	581,509	574,500	578,215	579,170	578,775	582,077	583,835	586,812

lease at the extreme southern end of the East Coalinga field, but is definitely a separate accumulation, as the productive area of this field does not overlap or extend over into the older productive section of the East Coalinga field. No. 2 Gatchell, the second well drilled in this area by Petroleum Securities, was bottomed at 6,893 feet. Subsequent drilling has indicated a probable productive area of at least 750 acres defined only in one direction. Several wells completed have shown a potential production of 20,000 bbls. per day, and one was rated as capable of flowing 50,000 bbls. The Avenal zone, found only fairly productive in the Kettleman North Dome field, shows a very high concentration in the Southeast Coalinga district, and core samples are only recovered with extreme care. The productive zone, 300 feet thick in several instances, contains what many engineers believe to be the most productive oil sand found in California. As practically all of the potential acreage is held by operators in sympathy with conservation, the Southeast Coalinga field has produced approximately only 200,000 bbls. Current production approximates 2,350 bbls. per day, against a nominal allotment of 2,500 bbls. Acreage originally held under lease by Petroleum Securities Co. in the Southeast Coalinga field and now being developed by R. S. Lytle as operating trustee is a joint undertaking, of which stockholders of Petroleum Securities Co. hold 50 per cent and Honolulu Oil Corp. and Seaboard Oil Corp. own 25 per cent each. In addition to the Petseahon interest, which consists of Petroleum Securities, Seaboard, and Honolulu, Standard Oil Co. and Superior Oil Co. have also developed production. No wells have been given open-flow tests, and all are brought in under wraps, being allowed to produce only a small amount of oil and gas as a conservation measure.

CALIFORNIA FIELD OPERATIONS BY MONTHS FOR YEAR, 1938

Month—	Wells completed— Number	Bbls. dly.	Dry and abd.
January	119	85,446	35
February	70	78,461	17
March	82	90,290	26
April	89	88,604	21
May	96	113,352	21
June	77	76,936	18
July	92	92,550	16
August	102	71,604	19
September	69	53,310	15
October	88	67,600	15
November	65	69,534	23
December	51	33,164	39
Total 1938	1,000	920,851	265
Total 1937	1,164	617,766	314
Total 1936	902	374,002	320
Total 1935	763	660,990	347
Total 1934	452	570,637	247

Tupman Field

Richfield Oil Corp. discovered a new oil and gas field in the Tupman district of Kern County in the San Joaquin Basin, about 3 miles east of the Elk Hills field, when No. 1 K.C.L.-Western was brought in flowing 3,752 bbls. of 49.1-gravity oil and 18,000,000 feet of gas per day on November 27, 1938. This new well was bottomed in upper Miocene at 8,677 feet. After being allowed to produce for a few days, it was killed to permit the field department to blank off the gas cap and reduce the gas-oil ratio. This was accomplished early in January, 1939. Structural conditions have not been determined, but the productive measure is believed to be the equivalent of the Stevens zone in a normal anticlinal fold. The zone penetrated has a thickness of 268 feet, of which 251 feet is rich oil sand, but may be found to be a much thicker horizon with additional drilling. The axis of the structure is believed to be an offshoot of the Elk Hills axis which bifurcates a mile or two east of Elk Hills, the north limb extending through the Tupman field and the south limb forming the axial feature of the Coles Levee field. Richfield Oil Corp. holds a block of 6,000 acres under lease in the Tupman area. The Tupman area consists of a series of low rolling hills and a gradually sloping plane with surface drainage to the southeast toward Buena Vista Lake. The discovery well is about 1 mile east and slightly north of a deep test which Standard Oil Co. drilled in the east end of Elk Hills to 8,404 feet and abandoned when the top of the Miocene was found barren. This well, however, was not located any too favorably with respect to structure and does not preclude deep-zone production.

Coles Levee

Ohio Oil Co. proved a new oil field in the Coles Levee district of Kern County November 11, 1938, by completing No. 1-F Kern County Land in Section 10-31-25, flowing 732 bbls. of 44.5-gravity oil and 5,700,000 feet of gas per day from the Stevens zone of upper Miocene age. A penetration of 145 feet below the top of the pay was taken, but subsequent development may reveal a much thicker zone. High-gravity crude in the discovery well indicates it is producing from the upper most part of the zone and well within the gas cap. With only one well completed at the end of the year, the areal and structural conditions are still conjectural. The discovery well is about 5 miles southeast of Richfield Oil Corp.'s discovery well in the Tupman field, both areas being west of the Ten Section field, where the Stevens zone was first found highly productive.

Canfield Ranch

The Canfield Ranch field of Kern County, about 1 mile east of the eastern boundary of the Ten Section field, was discovered by Standard Oil Co. when No. 15-1 Kern County Land in Section 27-30-26 was brought in flowing 800 bbls. of 27.5-gravity oil and 500,000 feet of gas per day from the Stevens zone of upper Miocene age, with bottom of the hole at 8,140 feet, but the effective depth at 8,072 feet due to a plug placed in bottom of the hole. Only one well has been completed in the Canfield Ranch field, and little is known regarding structural conditions and potential productive acreage involved. Standard Oil Co.'s initial well was drilled as an outpost in the Ten Section field, but failed to encounter the Stevens zone and was abandoned as a duster at 8,915 feet. The company then moved about 2,500 feet north and completed the discovery well in the Canfield Ranch field, as a dry hole had been drilled in the meantime in the intervening area between production in the Ten Section field and the location of No. 15-1 Kern County land.

Wasco

The Waso field of Kern County was discovered by Continental Oil Co., and at the close of the year contained two completed wells in addition to the initial well, which ran into mechanical trouble, but which produces a small quantity of oil. This field is the deepest producing area in the state and may become the deepest producing field in the world when operators produce the second zone just above 15,004 feet. Production is being taken from the 13,000-foot level, but Continental

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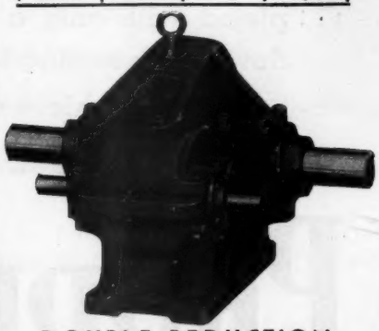
SINGLE REDUCTION
TYPE SO

A.P.I. Ratings at 20 S.P.M.

Size	Ratio	Nominal H.P.	Peak Torque Inch lbs.
21 SO	9.50 to 1	26.6	131,000
26 SO	9.50 to 1	42.2	209,000
27 SO	9.50 to 1	51.0	252,000
30 SO	9.58 to 1	63.6	315,000



DOUBLE REDUCTION
TYPE DO

A.P.I. Ratings at 20 S.P.M.

Size	Ratio	Nominal H.P.	Peak Torque Inch lbs.
7 DO	28.56 to 1	1.66	8,200
9 DO	40.00 to 1	2.90	14,300
10 DO	31.80 to 1	5.00	25,000
12 DO	31.80 to 1	11.40	56,500
15 DO	31.80 to 1	19.80	97,200
17 DO	31.80 to 1	30.00	148,000
20 DO	26.18 to 1	50.00	250,000

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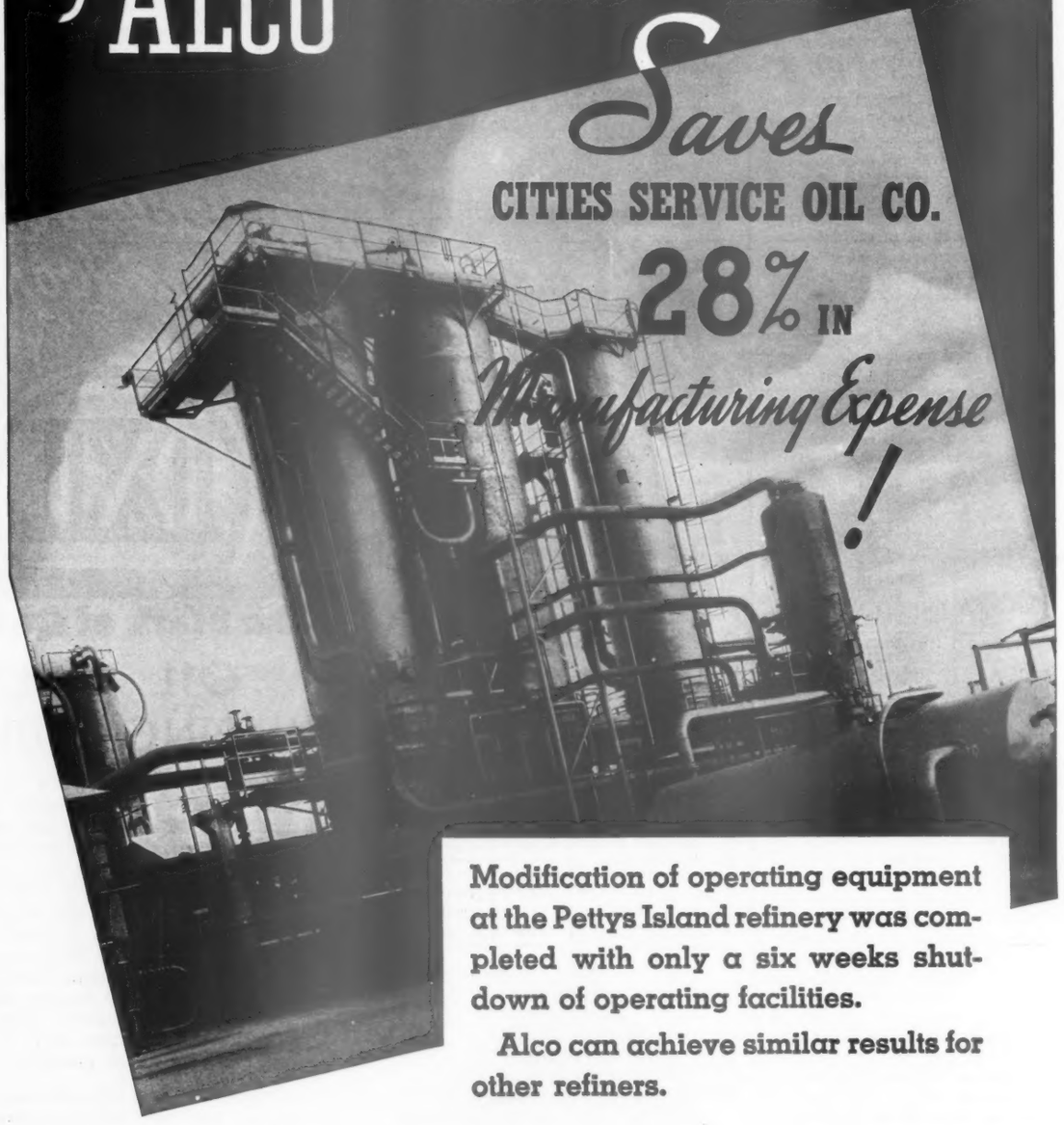

Modification of operating equipment at the Pettys Island refinery was completed with only a six weeks shutdown of operating facilities.

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engineers believe the lower zone looks best. The discovery well, No. 2-A Kern County Land, in Section 8-27-24, was completed April 11, 1938, flowing 2,900 bbls. of 34.7-gravity oil and 725,000 feet of gas, but the real indication of the field's potentiality was shown by Standard Oil Co. No. 1 Mushrush in Section 7-27-24, which came in flowing 6,528 bbls. of 34.5-gravity oil and 608,000 feet of gas from 13,139 feet on November 10, 1938. The discovery well was drilled to 15,004 feet. Approximately 150 acres are considered as definitely proved, although this may be increased. The discovery well was completed producing from 83 feet of oil zone.

CALIFORNIA FIELD OPERATIONS BY DISTRICTS FOR YEAR 1938

	Oil wells comp.	Initial prod.	Dry
Northern—			
Belridge—North	21	29,966	1
Belridge—South	4	165	...
Canal	14	32,309	...
Canfield Ranch	1	750	1
Coalinga	12	31,856	13
Coles Levee	1	826	...
Edison	2	285	2
Elk Hills	2	65	...
Fruitvale	18	4,625	1
Greeley	7	13,117	10
Kern River	26	1,163	7
Kettleman Middle dome	...	.....	...
Kettleman North dome	30	60,254	2
Lost Hills	5	424	5
McKittrick	3	568	4
Midway-Sunset	35	3,348	15
Mountain View	3	3,533	3
Mount Poso	17	3,460	13
Rio Bravo	23	79,434	...
Round Mountain	35	9,684	14
Ten Section	25	60,820	...
Tupman	1	3,752	...
Wasco	2	9,528	2
Wheeler Ridge	...	.....	...
Total	287	349,932	93
Coastal—			
Capitan	6	2,457	...
Elwood	...	.....	...
Rincon	9	2,637	...
San Miguelito	4	3,027	...
Santa Barbara	1	30	...
Santa Maria	86	80,831	12
Summerland	...	.....	...
Ventura Avenue	22	27,557	1
Ventura-Newhall	14	5,310	8
Watsonville	...	.....	...
Total	142	121,849	21
Southern—			
Brea Olinda	1	32	2
Coyote—East	4	1,285	1
Coyote—West	5	1,076	1
Dominguez	16	4,284	1
El Segundo	20	11,364	3
Huntington Beach	9	843	2
Inglewood	1	267	...
Lawndale	...	.....	...
Long Beach	32	7,949	3
Los Angeles-Salt Lake	...	.....	...
Montebello	32	32,667	1
Newport	...	.....	...
Playa Del Rey	...	.....	1
Potrero	2	1,110	...
Richfield	18	3,241	9
Rosecrane	31	32,873	3
Santa Fe Springs	2	141	...
Seal Beach	1	194	...
Torrance	129	39,648	2
Whittier	...	.....	...
Wilmington	261	312,096	2
Miscellaneous	...	.....	117
Total	564	449,070	148
Total oil fields	993	920,851	262
Gas fields—			
Buena Vista Lake	...	.....	...
Buttonwillow	...	.....	1
Chowchilla	...	.....	...
Delano	...	.....	...
Dudley Ridge	...	.....	...
Goleta	...	.....	...
McDonald Island	1	Gas	...
Rio Vista	6	Gas	1
Semi-Tropic	...	.....	1
Tracy	...	.....	...
Total gas field	7	Gas	3
Total state	1,000	920,851	265

Aliso Canyon

Tide Water Associated Oil Co. discovered a new oil field in the Aliso Canyon district of Los Angeles County on October 25, 1938. The discovery well, No. 1 Porter, in Section 27-3-16 was completed flowing 1,008 bbls. of 23.8-gravity oil and 650,000 feet of gas from the Pico formation of upper Pliocene age. This completion is of special interest because the bit drilled through a fault zone at 1,400-1,800 feet, the steep dips indicating the existence of an overturned fold. This, together with possible severe thrust faulting, may be responsible for accumulation of oil and gas. The bit started in rocks of Modello formation of upper Miocene age and, contrary to the normal geologic column, penetrated the Pico formation (Fernando group) of upper Pliocene age. This reversal of the geologic column reflects existence of an overturned fold, the normally higher Pliocene being folded beneath the older Miocene rocks. No. 1 Porter, which has an elevation of 2,180 feet, indicative of the rough topography involved, is about 7 miles northwest of San Fernando and about 28 miles northwest of

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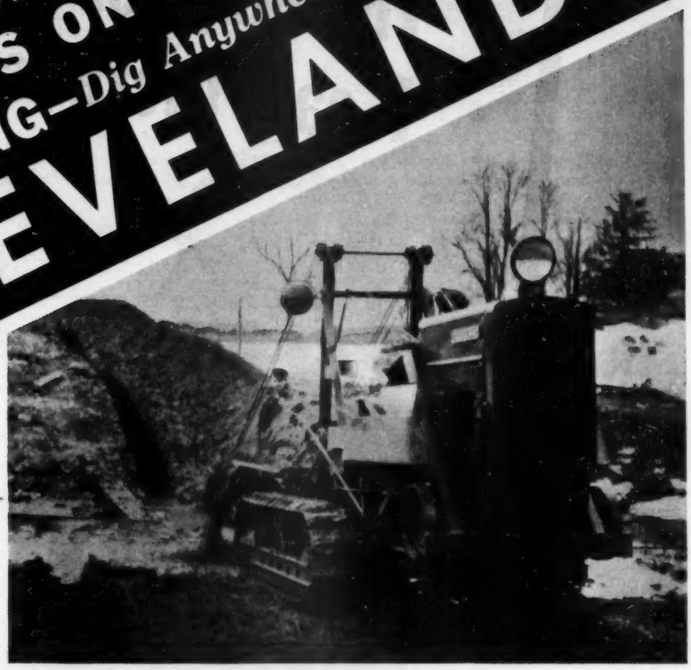

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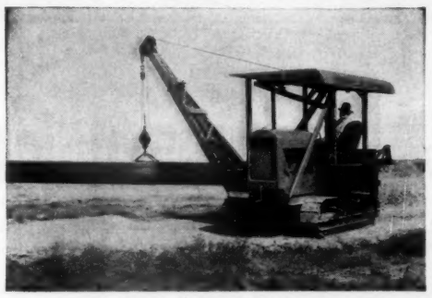

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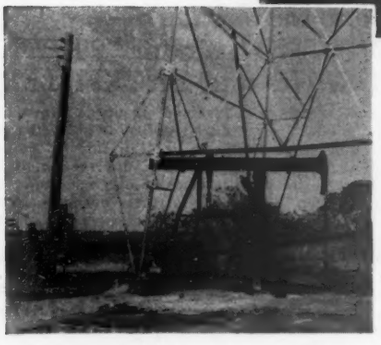

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PETROLEUM ELECTRIC POWER CLUB

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY

(Barrels)

	Heavy crude and fuel	Diesel and gas oil	Refinable crude	Natural gasoline	Gasoline	Naphtha distillates	All other stocks	Total all stocks
1937—								
December 31	67,657,050	6,819,579	30,410,671	2,001,204	13,520,678	1,464,577	6,166,488	128,040,247
1938—								
January 1	*68,529,388	*8,648,990	*29,417,842	2,001,204	13,520,678	1,464,577	*4,457,568	128,040,247
January 31	71,758,162	8,865,191	29,393,330	2,121,425	14,443,190	1,333,075	4,769,380	132,683,753
February 28	74,428,663	9,103,824	31,104,054	2,390,076	15,134,960	1,587,174	4,778,383	138,527,134
March 31	76,907,466	9,241,322	31,556,951	2,549,761	15,452,752	1,666,410	4,994,964	142,369,626
April 30	79,873,516	9,361,306	31,376,515	2,689,376	14,729,793	1,663,567	5,275,209	144,969,282
May 31	81,652,079	9,297,687	31,529,797	2,913,534	13,895,109	1,628,985	5,617,159	146,534,350
June 30	82,684,670	9,669,433	33,156,394	3,190,274	12,975,245	1,496,083	5,797,773	148,969,872
July 31	84,487,193	10,017,467	33,022,559	3,312,990	12,145,707	1,377,637	6,117,149	150,480,702
August 31	84,922,649	10,269,247	33,099,463	3,356,516	11,400,449	1,324,354	6,094,961	150,467,639
September 30	86,622,066	10,886,653	33,594,928	3,402,834	11,663,318	1,352,247	5,715,707	153,237,753
October 31	87,335,275	10,878,753	34,766,423	3,038,914	12,506,153	1,383,671	5,413,051	155,322,240
November 30	87,598,717	10,685,631	35,965,731	2,974,191	12,985,975	1,435,281	5,949,173	157,594,699

*Revised.

Los Angeles in Los Angeles County, and is producing from a zone consisting of oil sand and shale approximating 560 feet in thickness. Tide Water Associated Oil Co. controls about 900 acres, of which 597 acres are mountainous land in the most northernmost section of San Fernando Valley, within Los Angeles city. Standard Oil Co. has leased about 160 acres, Union Oil Co. 200 acres, and Shell Oil Co., which entered the area later, acquired a lease on acreage surrounding the San Fernando Mission, which at present appears to be rather far out on the structure. Tide Water Associated Oil Co. late in 1938 filed an application for permission to drill 60 wells with the Los Angeles Planning Commission. Tide Water Associated does not intend to drill these 60 wells in the Aliso Canyon field at once, but to prevent further delays has applied for all permits at once. Due to the faulted conditions of the structure it may be several month before data is available to establish the acreage that should be found productive.

Extension Work and Deep Drilling

Extension work and deeper drilling in proven fields contributed substantially to the overproduction of crude during 1938 and was responsible for an appreciable increase in reserves in certain areas. Substantial additions to reserves were recorded in the Rio Bravo, Canal, and Greeley fields of Kern County. In Los Angeles Basin drilling extended the limits of the Wilmington and Torrance fields. By agreement operators approved a plan to refrain from developing the deep Ford zone in the Long Beach Harbor section of the Wilmington field during 1939. A similar agreement prevailed during 1938. In Rosecrans field operators undertook exploitation of the O'Dea zone of Miocene age, while in the Long Beach field Hilldon Oil Co. extended production in the West Cerritos area as well as proving the Miocene productive, and De Soto Oil Co. completed a well in a new deep zone in the older section at 10,157 feet. In Montebello field operators proceeded with development in the west end, where deeper zones were discovered late in 1937, and apparently discovered another new zone late in 1938. In the coastal area General Petroleum Corp. extended the northern productive limits of the deep 57 zone, and Shell Oil Co. extended the western limits of production in th Ventura Avenue field, while Continental Oil Co. extended production in the San Miguelito field. It has not been determined whether the eastern end of the San Miguelito field and the western end of the Ventura Avenue field are on separate accumulations or are part of the Ventura Avenue structure. A distance of less than 1 mile separates the two areas, which indicates the well in the eastern end of the San Miguelito fields are really outposts on the extreme western end of the Ventura Avenue field.

Deep Zone at Greeley

Standard Oil Co. found the equivalent of the Rio Bravo zone highly productive in the Greeley field of Kern County on June 13, 1938, when No. 11-2 Kern County Land in Section 20-29-26 was completed flowing at the rate of 15,096 bbls. of 36.7-gravity oil and 15,000,000 feet of gas per day from 11,520 feet. This deep well is of importance because it failed to find production in the overlying Stevens zone and also because the production developed in the underlying Rio Bravo zone indicates the lower zone will be more nearly uniform and probably free of the lenticular condition found in the Stevens zone. Discovery of deep-zone production in the Greeley field is also of importance because it indicates the Rio Bravo zone or its equivalent can be expected productive in the Ten Section, Canal, Canfield Ranch, and similar fields in San Joaquin Basin.

Miocene Production at Montebello

St. Helens Petroleum Co. proved a new deep zone in the west end of the Montebello field of Los Angeles Basin on January 2, 1938, when No. 20 Monterey was completed flowing 1,250 bbls. of 37.9-gravity oil and 5,904,000 feet of gas per day, with bottom of the hole at 6,353 feet. The deep Miocene zone was discovered in December, 1937, but the discovery well came in wet, and the actual completion extended into 1938. The well was the first Miocene producer in the west end of the field and resulted in development in the town-lot section. During the year the fifth zone was developed, and deeper drilling opened four fingers of a sixth zone. Late in

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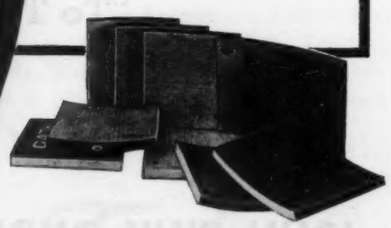

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the year Hathaway Oil Co. completed No. 1 Dore in the extreme southwestern end of the structure from a depth that suggests a seventh productive horizon. No wells located higher structurally had been carried into this new zone, but one or more tests will be made during 1939. Union Oil Co., discounting the theory of a cross fault between the older section of the Montebello field and the western extension, started a well on the Calkins property at the extreme eastern end of the western extension, and started a well on the La Merced lease within the older area and definitely east of the theoretical fault. Standard Oil Co. failed to find the Miocene productive in a deep test drilled on top of the structure several years ago. Miocene production has been developed on both the eastern and western ends of the Montebello structure, but none on the apex of the primary structure.

Harbor City

D. & B. Oil Co. discovered an accumulation of oil and gas in the Harbor City area, about 1 mile south of the Lomita section of the Torrance field, June 19, 1938, when No. 1, Section 30-4-13, was brought in flowing 850 bbls. of 29.6-gravity oil and 350,000 feet of gas per day from 5,257 feet. The Harbor City area has been proved to be a separate accumulation from Torrance, although probably laid down at the same time. Production of Harbor City has been somewhat disappointing in initial production. The gas is very low and production of oil has been relatively small. As in the Lomita section of Torrance, wells in the Harbor City area show a rapid decline, field production showing a drop before maximum development has been reached.

Storage Situation

The outlook for 1939 is reassuring, as producers recognize the necessity of restricting production to 600,000 bbls. per day. This will not balance supply and demand, but should make it possible for buyers to cope with the condition. Heavy crude and refinery residuum proved to be a drag on the market during 1938 and showed a substantial accumulation. Diesel and gas-oil stocks also showed a substantial increase, which resulted in price recessions on two occasions. Stocks of gasoline did not show much change. Stocks of natural gasoline increased about 900,000 bbls., and stocks of naphtha distillates, tops, remained relatively constant. Refinable crude showed a substantial increase, particularly during the latter part of the year when refinery operations were restricted due to shortage of steel tanks.

Southwest Texas Fields

(Continued from Page 96)

tion resulted in a revival of drilling and at the close of the year approximately 15 rigs were operating, making this field the most active in the district.

Important sand discoveries in the Corpus Christi district were made at the Saxet field, Nueces County, and the Keeran field in Victoria County. Richardson Petroleum Co. No. 1 Cain & Seachrist opened the way for deeper drilling in the Saxet field as the well was completed as a distillate producer at 9,925 feet. Little information was obtained as to the thickness of the sand, as the well had to be completed with the drill stem in the hole due to an attempted blowout. In Victoria County, the Keeran field was extended 4,500 feet to the northwest with a new sand discovery at 7,002-10 feet which is the deepest Frio production to be developed in the county and opens the way for deeper drilling along this trend.

Drilling activity in the West Saxet field, Nueces County, which opened during the first few days of the year, is being brought to a close. The field was discovered by L. A. Douglas with the completion of No. 1 Charles McKenzie, 7½ miles northwest of the Saxet field. Saturation was cored in the Frio formation at 5,810-12 feet, where the well made an initial production of 360 bbls. of 35-gravity oil, flowing through a quarter-inch choke. The block on which the discovery well was drilled was purchased by Phillips Petroleum Co. Additional sands in the Catahoula and Heterostegina formations have been developed, but production will not extend over 1,300 acres.

Cockfield Trend

The discovery of three fields along the Cockfield trend through eastern Duval County, and the opening of several shallow fields in western Duval, McMullen and Webb counties were the outstanding developments in the Laredo district. The new fields along the Pettus trend in Duval County were Fitzsimmons and Tesoro fields, opened by H. J. Porter and Arkansas Fuel Oil Co. The Porter well was completed in the Cockfield sand at 4,292-4,303 feet, and additional development opened production in the Government Wells sand at 3,800 feet. Approximately 15 miles south, Arkansas Fuel Oil Co. found production at 5,109-17 feet, and the discovery well made an initial production of 78 bbls. of 43.4-gravity oil, and 8 bbls. of salt water. Additional drilling has not been encouraging. South of the Sweden field, the Longhorn field was opened by Longhorn Drilling Co. No. 1 Miller which was completed in the Hockley sand at 4,893-99 feet. This sand corresponds with one of the shallow sands at the Benavides field, several miles north which was the first Pettus sand field to be found along this trend and which resulted in a general wildcatting campaign.

In the same county, but located along the shallow Laredo-Pettus trend, seven pools were added. The most important were the Casa Blanca field, opened by Magnolia Petroleum Co. with No. 1 Duval County Ranch Co. which produces from the Cole sand. In McMullen County production was opened from the Mirando sand at 1,202-13 feet by Bruce Albright and others on the Nueces Land & Live Stock Co. lease.

Two distillate fields were opened in Hidalgo County, both of which were completed in the Frio-Vicksburg sand. In the eastern part of the county, Atlantic Refining Co. opened the Weslaco pool with No. 1 American Rio Grande. The completion was made in the Frio formation through perforated casing at 8,634-42 feet, and the well flowed 71 bbls. of 51-gravity distillate. The well was shut in shortly after completion and no additional development has been done. In the southern part of the county, Block 2, Kelley Phar subdivision, R. E. Harding is believed to have opened a large structure with the completion of No. 1 Lynn. This well flowed an estimated 100 bbls. of fluid of which 25 per cent was 61.5-gravity distillate, and the balance salt water. Casing was perforated at 5,970-75 feet. Two miles west of the well and located near the McAllen townsite, the same operator completed No. 1 Card at 7,440-65 feet, for an initial production of 5,000,000 feet of gas and a small amount of distillate. Both wells are believed to be located on the same structure which is said to cover approximately 6,000 acres.

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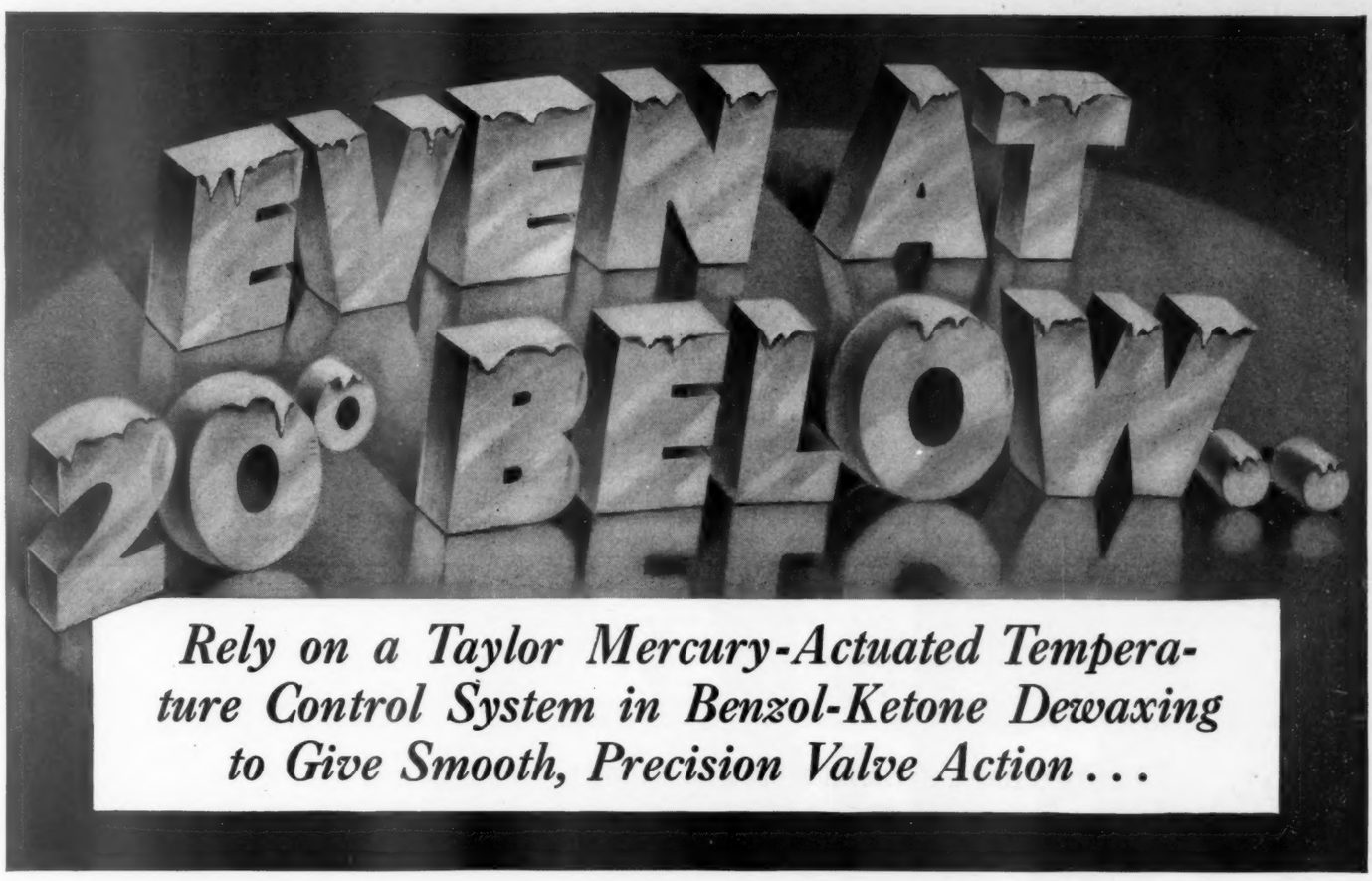

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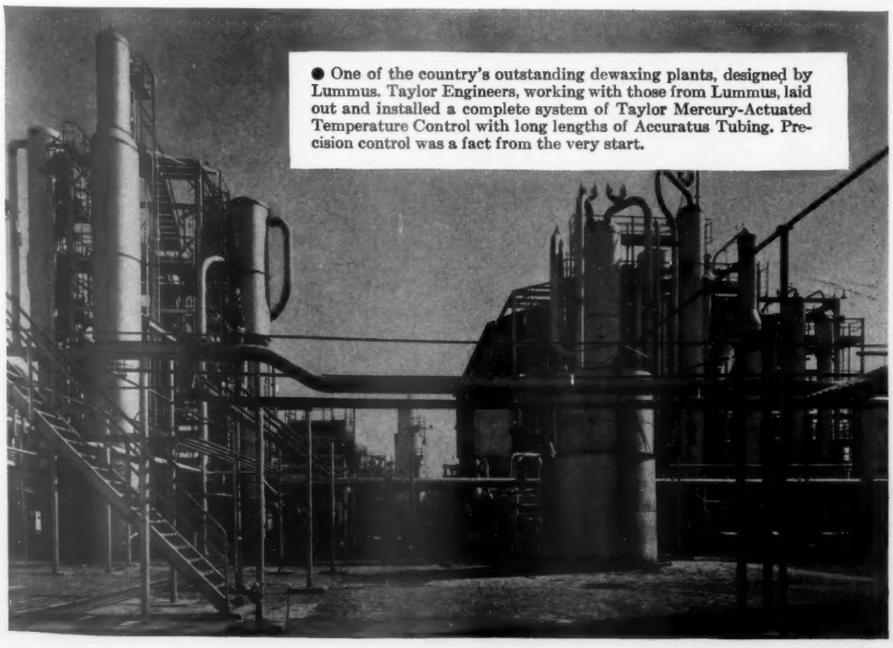

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Annual Review

OPEN FIVE OIL AND DISTILLATE POOLS IN EASTERN TEXAS COUNTIES

By D. H. STORMONT

The eastern Texas area was given five new fields in 1938, but only one has developed into a commercial oil pool. Three of the discoveries were gas-distillate areas, of which two are producing from the deep lower Marine Trinity series.

The great East Texas field entered its ninth year of production with a total of 25,856 wells. The field yields a daily allowable of 521,755 bbls. of oil, and a total of 149,072,000 bbls. were produced during 1938, despite 71 days of lost production through Saturday and Sunday shutdowns; 19,447 of its total completions are classified as marginal producers. The reservoir pressure remains strong, having shown increases in the last three months of 1938. The pressure has shown a decline of less than one-tenth pound per million barrels produced in the past 10 months, with an increase of 1.5 pounds, or to a total of 1,109.71 pounds per square inch, during the last month of 1938. During the eight years the field has produced 1,161,613,000 bbls. of oil, and engineers estimate the ultimate recovery will amount to about 4 billion barrels.

During the past year 1,633 new completions were made in the field, all but 38 of which made commercial producers. The aggregate initial new production in the field amounted to 83,793 bbls., based on very short-time first-day production.

Discoveries

In April Humble Oil & Refining Co. and Sun Oil Co. completed No. 1 H. H. Dailey, J. J. La Riviere Survey, in Houston County, for 296 bbls. of oil per day to open the Navarro Crossing field. Production is from the Woodbine sand at a depth of 5,890 feet. Immediate development began in the area by both Humble and Sun companies; and as the year closed, there were four oil wells in the field. Its limits were partly defined by the second and third tests drilled in the area, these being mile outposts on two sides, both of which were dry. The field is estimated to have 120 proven acres and about 120,000 bbls. of recoverable oil in place.

Late in September Leon County received a new producing spot when T. J. Tucker (now Hughes and others) completed No. 1 Sam Bane for 171 bbls. of oil per day, with considerable water. The well is producing from the Woodbine sand at a depth of 5,515 feet. No immediate development is foreseen for the area, since the water flow of the well has shown a constant increase since its completion.

Three deep lower Marine Trinity fields were opened to production, one each being in Anderson, Smith, and Gregg counties. The most promising of these is the

EASTERN TEXAS FIELDS DISCOVERED DURING 1938

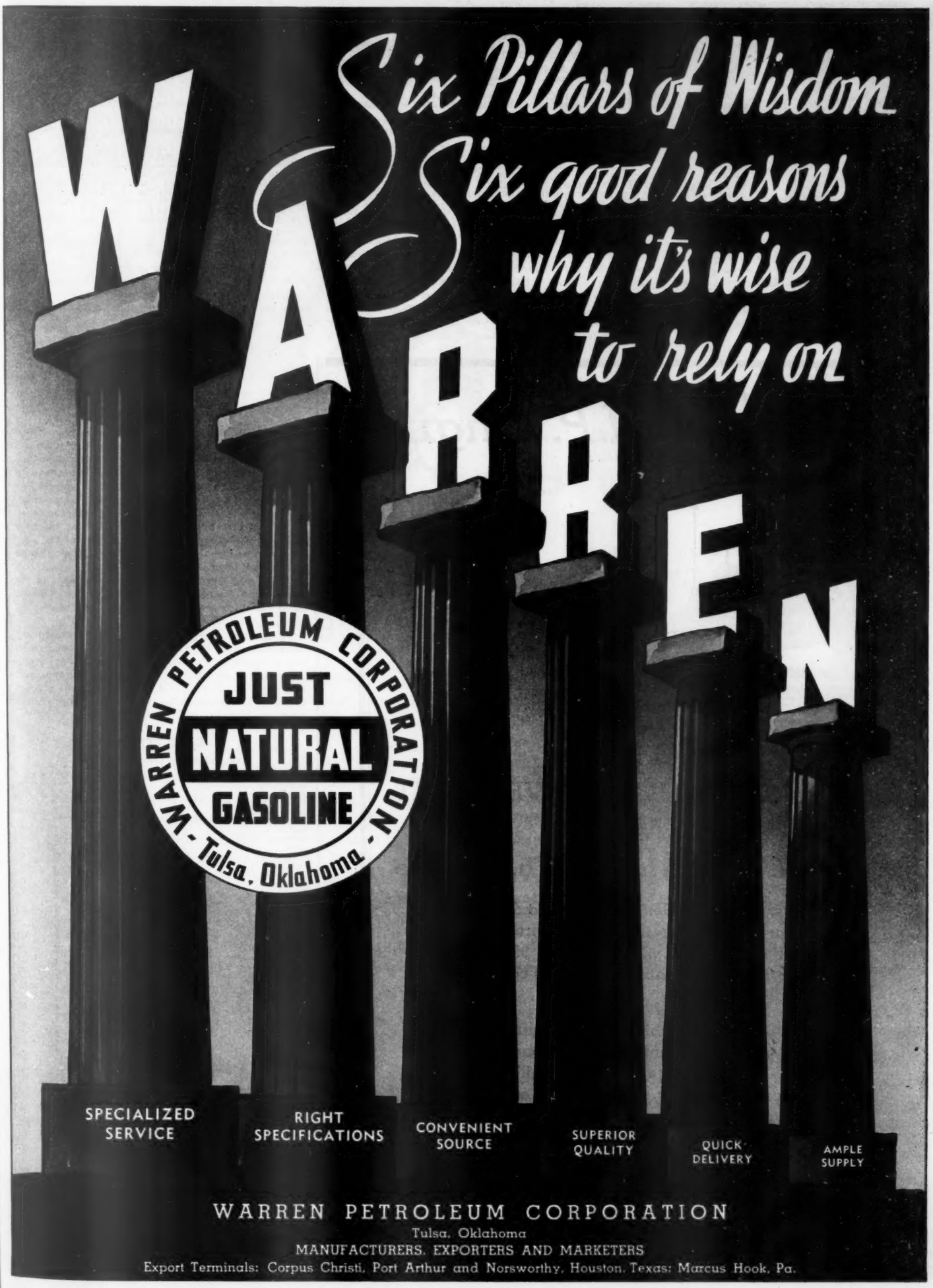
County—	Location	Discovery well	Date	Depth	Formation	Production	No. wells	Name of field
Anderson	John Gossell Survey	H. L. Parsons No. 1 H. B. Hemby	January	T.D. 5,487	Woodbine sand	21.5 bbls. distillate and 8,000,000 ft. gas per day	1	
Houston	J. J. La Riviere Survey	Humble Oil & Refining Co. and Sun Oil Co. No. 1 H. H. Dailey	April	T.D. 5,890	Woodbine sand	296 bbls. per day	4	Navarro Crossing pool
Smith	T. P. Payne Survey	Hunt Oil Co. No. 1 Bradley	June	T.D. 7,325	Glen Rose of lower Trinity	15 bbls. distillate per day	1	
Gregg	M. Mann Survey, 2½ miles south of Longview	Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 Robertson	June	7,244-86	Glen Rose of lower Trinity	26 bbls. distillate per day and 5,000,000 ft. of gas	2	Willow Springs pool
Leon	James Webb Survey, 4½ miles southeast of Keechi	T. J. Tucker No. 1 Sam Bane	September	5,510-20	Woodbine sand	171 bbls. per day	1	

EAST CENTRAL TEXAS

Daily Average and Monthly Production in 1938

	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
CORSICANA:													
Daily average	405	418	422	432	428	417	429	444	388	409	425	440	
Month	12,561	11,712	13,071	12,966	13,276	12,521	13,300	13,768	11,642	12,682	12,745	13,646	153,890
CURRIE:													
Daily average	111	107	110	110	89	107	95	110	94	107	100	107	
Month	3,445	3,009	3,412	3,311	2,748	3,216	2,958	3,398	2,827	3,314	2,995	3,325	37,958
MEXIA:													
Daily average	1,857	1,903	1,893	1,877	1,895	1,862	1,824	1,816	1,741	1,763	1,772	1,802	
Month	57,558	53,287	58,678	56,312	58,751	55,860	56,535	56,309	52,225	54,639	53,172	55,870	669,196
POWELL:													
Daily average	2,084	1,988	2,036	2,023	2,007	2,033	2,015	2,042	1,978	1,964	1,974	2,012	
Month	64,613	55,662	63,118	60,684	62,204	60,992	62,450	63,301	59,356	60,888	59,237	62,375	734,880
SULPHUR BLUFF:													
Daily average	4,260	4,074	3,184	4,149	4,717	4,494	5,338	5,391	4,551	4,602	4,555	4,105	
Month	132,075	114,075	98,691	124,489	146,221	134,823	165,491	167,110	136,536	142,657	136,665	127,262	1,626,095
VAN:													
Daily average	18,042	16,081	16,768	16,567	14,295	14,814	16,151	16,432	13,861	14,009	13,848	14,037	
Month	559,304	450,265	519,805	497,009	443,141	444,427	500,683	509,395	415,849	434,285	415,443	435,149	5,624,755
BOGGY CREEK:													
Daily average	334	343	332	373	325	325	370	383	308	315	292	298	
Month	10,353	9,614	10,285	11,189	10,087	9,747	11,471	11,878	9,232	9,772	8,785	9,232	121,645
CAYUGA:													
Daily average	9,140	8,582	8,738	8,784	7,650	7,411	8,999	9,434	8,238	8,398	8,673	8,265	
Month	283,328	240,309	270,882	263,526	237,161	222,336	278,955	292,442	247,134	260,347	260,199	256,210	3,112,829
FLAG LAKE:													
Daily average	94	86	244	290	313	319	502	448	406	568	581	601	
Month	2,900	2,400	7,554	8,700	9,694	9,570	15,558	13,893	12,192	17,601	17,416	18,634	136,112
LONG LAKE:													
Daily average	1,471	1,432	1,484	1,520	1,347	1,401	2,257	2,350	2,026	2,193	2,188	2,341	
Month	45,612	40,099	45,989	45,597	41,753	42,037	69,976	72,845	60,776	67,986	65,633	72,566	670,869
RODESSA:													
Daily average	21,070	29,449	36,205	37,608	37,121	34,619	30,124	30,415	30,430	30,437	30,130	29,837	
Month	653,159	824,570	1,122,367	1,128,249	1,150,760	1,038,576	933,831	942,860	912,901	943,550	903,912	924,958	11,479,693
TALCO:													
Daily average	25,834	24,061	27,054	26,516	24,218	24,110	27,808	28,600	24,596	24,777	24,926	29,426	
Month	800,879	673,709	838,683	795,471	750,769	723,307	862,044	886,613	737,889	768,075	747,765	913,760	9,498,955
TRINITY:													
Daily average	666	626	605	579	515	522	619	616	525	562	504	530	
Month	20,637	17,524	18,744	17,387	15,965	15,654	19,190	19,102	15,759	17,433	15,120	16,426	208,941
NAVARRO CROSSING:													
Daily average	.....	.....	.....	.....	.....	.....	76	16	6	73	180	185	
Month	.....	.....	.....	.....	.....	.....	2,360	481	180	2,260	5,386	5,739	16,406
MISCELLANEOUS:													
Daily average	471	498	518	526	483	486	588	618	476	701	.....	.....	
Month	14,603	13,941	16,057	15,786	14,968	14,572	15,883	18,666	14,097	19,473	19,036	20,090	197,172
Daily average	85,839	89,649	99,591	101,356	95,403	92,921	97,120	97,099	89,619	90,805	90,784	94,685	93,944
Total 1938	2,661,018	2,510,176	3,087,336	3,040,676	2,957,498	2,787,638	3,010,685	3,072,061	2,688,595	2,814,962	2,723,509	2,935,242	34,289,396
Total 1937	3,269,687	3,057,810	3,760,600	3,531,526	3,900,811	3,782,195	3,798,162	4,167,853	3,446,920	3,370,061	2,950,685	2,950,713	41,987,023
Total 1936	1,379,138	1,383,241	1,513,836	1,529,814	1,636,711	1,592,121	1,764,106	1,930,376	1,976,086	2,298,220	2,208,872	2,738,771	21,941,292
Total 1935	1,598,825	1,439,129	1,597,656	1,463,460	1,480,095	1,444,800	1,521,598	1,441,482	1,444,861	1,436,003	1,397,957	1,546,794	17,812,660
Total 1934	1,337,450	1,207,167	1,353,109	1,418,875	1,570,523	1,607,163	1,560,476	1,605,503	1,558,617	1,346,688	1,297,730	1,427,468	17,290,769

Miscellaneous pools not listed above, and their total production in barrels in 1938 were Bolivar, 2,464; Bosque (South), 3,911; Collinsville, 7,338; Lott, 8,809; Opelika, 4,656; Post Oak, 663; Pottsboro, 1,561; Richland, 6,312; Wortham, 30,042; Ginter, 5,694; Grapeland, 23,897; Huntington, 2,700; Nacogdoces, 783; Panola, 9,143; Percilla, 7,274; Potter, 35,389; Rusk, 18,929; Shelbyville, 598; Waskom, 19,096; Harrison, 90; Satin, 70; Buffalo, 2,484; Negro Creek, 158; Lone Star, 5,111; total, 197,072.



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EAST TEXAS

Daily Average and Monthly Production in 1938

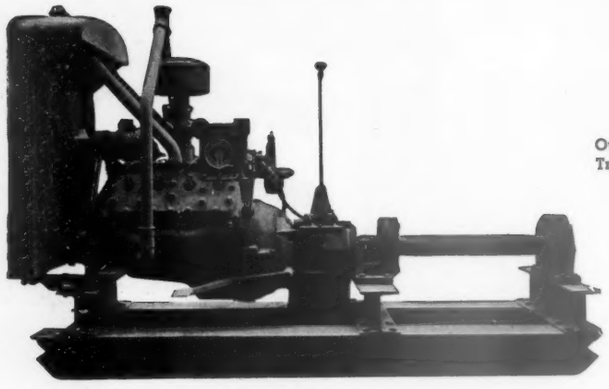
	January (bbls.)	February (bbls.)	March (bbls.)	April (bbls.)	May (bbls.)	June (bbls.)	July (bbls.)	August (bbls.)	September (bbls.)	October (bbls.)	November (bbls.)	December (bbls.)	Ttl. 1938 (bbls.)
JOINER:													
Daily average	137,089	131,081	134,405	129,738	115,440	112,778	132,563	137,538	116,191	118,297	117,230	120,773	
Month	4,249,759	3,670,268	4,166,555	3,892,140	3,578,640	3,383,340	4,109,453	4,263,678	3,485,730	3,667,207	3,516,900	3,743,963	45,727,633
KILGORE:													
Daily average	146,226	135,312	138,740	138,386	119,163	114,597	136,837	139,756	119,937	121,423	121,006	122,310	
Month	4,533,006	3,788,736	4,300,940	4,151,580	3,694,053	3,437,910	4,241,947	4,332,436	3,598,110	3,764,113	3,630,180	3,791,610	47,264,621
LONGVIEW:													
Daily average	173,644	156,452	160,417	164,333	137,782	136,425	158,218	166,376	138,678	141,009	140,010	145,202	
Month	5,382,964	4,380,656	4,972,927	4,929,990	4,271,242	4,092,750	4,904,758	5,157,656	4,160,340	4,371,279	4,200,300	4,501,262	55,326,124
Daily average	456,959	422,845	433,562	432,457	372,385	363,800	427,618	443,670	374,806	380,729	378,246	388,285	406,353
Total 1938	14,165,729	11,839,660	13,440,422	12,973,710	11,543,935	10,914,000	13,256,158	13,753,770	11,244,180	11,802,599	11,347,380	12,036,835	148,318,837
Total 1937	13,958,184	12,649,536	14,301,075	13,889,160	14,407,994	14,112,420	14,542,968	14,629,272	14,305,200	14,933,072	14,001,780	13,507,072	169,237,733
Total 1936	14,238,858	13,743,390	14,409,358	14,328,360	14,524,368	13,821,780	13,084,004	13,229,980	12,953,268	13,486,434	13,171,740	13,797,333	164,788,873
Total 1935	14,257,675	13,804,392	15,318,960	14,130,960	14,954,958	15,143,970	15,160,550	15,064,450	14,461,230	14,698,774	14,139,840	13,937,414	175,073,173
Total 1934	13,982,092	13,168,462	15,642,196	15,261,750	15,867,946	16,730,673	16,979,822	15,131,623	15,720,130	13,928,703	12,920,388	13,166,626	178,500,411

Gregg County discovery, Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 Robertson, in the M. Mann Survey, about 2½ miles southwest of Longview. The discovery well was completed in June for 26 bbls. of distillate and 5,000,000 feet of gas per day from the Glen Rose formation at a depth of 7,286 feet. In October the field received its second well in the form of a 1½-mile southwest extension.

Smith County was given a deep Glen Rose distillate pool in June when Hunt Oil Co. completed No. 1 Bradley, in the T. P. Payne Survey, for 15 bbls. of distillate daily from a depth of 7,325 feet. No further development has been given this pool; but together with the Gregg County discovery, it may stimulate deep drilling in 1939. These two spots, with the exception of Opelika, in Henderson County, have the only lower Marine production found in the East Texas basin south of the Talco and Sulphur Bluff fields.

A small distillate field was opened in January, 1938, in Anderson County when H. L. Parsons completed his No. 1 H. B. Hemby for approximately 20 bbls. of distillate daily. Production is from the Woodbine sand at a depth of 5,487 feet. No development has been made in this area as yet.

New 95 H.P. Engine



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Field Development

The Flag Lake field of northwestern Henderson County, together with the Cayuga pool of Anderson, Henderson, and Freestone counties, constituted the majority of the development for proven areas during the year past. At the start of 1938 Flag Lake was a one-well pool, with its true proportions entirely unknown but estimated by many. As the year closed, there had been 16 wells completed, and the pool had spread to cover more than 300 acres. Production is from the Woodbine sand; however, development has been slowed, due to the unfavorably high gas-oil ratios encountered in the wells. Until the last month of the year, the field had been without an outlet; but the close of the year saw Humble Pipe Line Co. building about an 18-mile line to its Mildred station.

The Cayuga pool received several extensions to the south, which has spread it down into Freestone County. Since the discovery of the field in 1933, most of its development has been northward.

In October the Humble-Tide Water-Seaboard Oil companies staked their third test on the Opelika structure of Henderson County. The operators have two producers in the deep Marine Trinity producing spot, and the results of the third test, which was in the process of drilling as the year closed, will do much to determine the future of this field.

EAST TEXAS

Completions by Counties for 1938

County—	Comp.	Prod.	Dry	Gas
Anderson	58	3,242	6	18
Angelina	14	34	12	0
Bowie	3	0	3	0
Camp	1	0	1	0
Cherokee	13	93	10	0
Dallas	1	0	1	0
Delta	3	0	3	0
Ellis	1	0	1	0
Falls	3	0	3	0
Franklin	41	8,805	4	0
Freestone	20	2,733	3	1
Grayson	5	547	3	0
Gregg	867	47,581	9	1
Henderson	42	3,949	17	1
Hill	2	0	2	0
Houston	18	826	8	2
Kaufman	3	0	3	0
Lamar	1	0	1	0
Leon	7	171	3	3
Limestone	7	0	7	0
McLennan	4	0	4	0
Madison	4	0	4	0
Nacogdoches	1	0	1	0
Navarro	15	50	12	0
Rains	1	0	1	0
Red River	4	0	4	0
Rusk	570	27,491	12	0
Smith	41	1,813	5	0
Titus	46	12,039	2	0
Trinity	7	0	7	0
Upshur	150	6,815	7	0
Van Zandt	7	24	6	0
Total 1938	1,960	116,213	165	26

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	201	13,817	16	1
February	215	13,035	14	2
March	227	13,449	12	4
April	210	11,787	16	2
May	180	9,954	16	2
June	189	11,794	19	2
July	148	9,017	13	1
August	136	6,558	19	1
September	120	6,735	13	3
October	114	7,068	8	2
November	133	7,862	12	3
December	87	5,137	7	3
Total 1938	1,960	116,213	165	26
Total 1937	3,075	258,284	176	19
Difference	1,115	142,071	11	7

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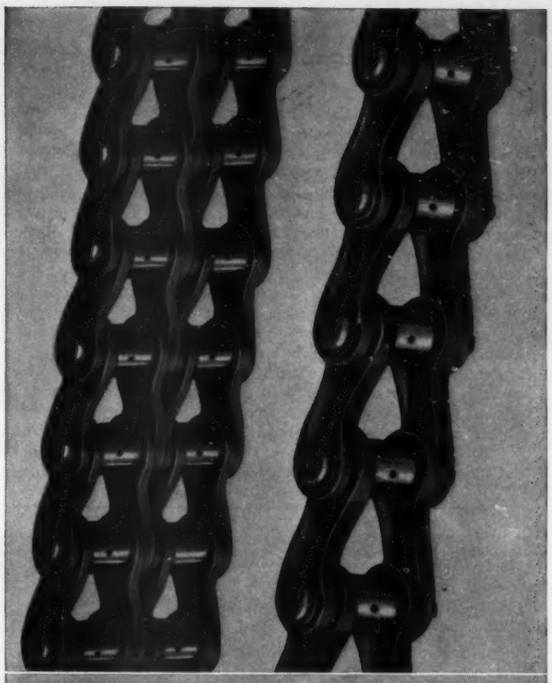

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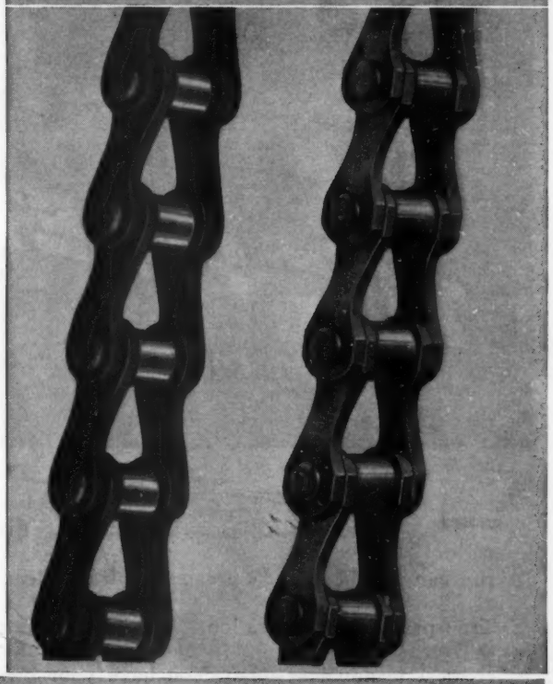

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Michigan Fields

(Continued from Page 161)

the district bordering Lake Michigan and south of the old Muskegon field. The Salem strike in Allegan County on March 2, 1937, first attracted operators to the far southwest locations. By December 15, Monterey showed 25 Traverse producers. Discovery of a commercial pool in Dorr Township, Allegan County, followed on March 1, rivaling the Monterey pool. Not until midsummer, however, was the Overisel Township pool tapped in Allegan to launch a new rush of operators to the district. The Overisel discovery in Section 36, closely followed by the so-called Overisel "21" pool a month later, combined to add 77 new wells by December 15. Bloomingdale, in Van Buren County, was discovered the same day as the Overisel "21" pool, July 17, and by the year-end had raised its flush production from the shallow Traverse limestone to a quarter of the state's total production.

Central Michigan, previously accepted as the district of greatest potential development, was not without its prolific new discoveries. Discovery of the Edenville pool in Midland County January 31, 1938, indicated a highly favorable future for this field, but a slump in development in midyear showed 42 completions for the year, only 29 of which were operating as the ear closed.

The Clare field, in Freeman and Redding townships, developed since mid-July, gave early indication of being one of the best discoveries since Buckeye. Its prolific producers range from 500 to more than 5,000 bbls. daily, with only a limited amount of acreage has been explored. Operators are developing the field in a conservative manner, yet steadily. The discovery was in Section 3 of Freeman Township, and was closely followed by a strike in Section 34 of Redding Township, 1½ miles to the north.

Reliable Buckeye

Faithful Buckeye, top producing field in the state, added 73 wells during 1938 to raise its total to 404 as compared with 331 on December 31, 1937. Buckeye wells, however, were showing a daily average run of 11,947 bbls. in December. Steady production from its older wells was one of the major factors in Buckeye's grip on production honors month after month.

One new field was indicated as 1938 dawned—Bentley-Secord in Gladwin County—which started January with four producers in Bentley and two in Secord, ended the year with 35 producers, none large, although good for an average daily run of 658 bbls. In productivity the field was a disappointment, mainly due to its close proximity to Buckeye and the hope the pay vein was the same as Buckeye.

The Sherman pool in Isabella County, almost an exclusive Pure Oil Co. development, showed 52 producers as 1938 opened. Orderly development of its highly favorable producers brought the total for the field up to 65, although production declined from 7,000 bbls. daily average to 2,300 bbls. a year later. The Arenac-Adams pool, with only three producers in January, 1938, completed the year with 13 producers, and was a disappointment in production volume. This field, however, holds possibilities as being the only Central Michigan pool to produce from both the Traverse and Dundee limestone. Dundee production was tapped at an experimental well in midsummer, later confirmed by a second Dundee producer. The Clayton field, also in Arenac County, discovered in June, 1935, showed 54 producers at the close of 1938, a 40 per cent increase in a year. Slow development progress was recorded in the Ogemaw-West Branch area in 1938, only 20 wells being added as producers over one year ago.

One new discovery in the summer of 1938, not yet listed by oil producers as a prospective field, brought the first oil production to the Thumb district. Oil was struck at a wildcat in North Akron Township, Tuscola County, and after about five months the well still was producing 13 bbls. daily. An attempted confirmation test in the locality failed, and no further exploration has been launched. Likewise, efforts to tap Dundee limestone production in Saginaw County's old Berea sandstone field failed, as did several other attempts throughout the year to revive a Saginaw oil boom.

Several of the minor oil pools which showed little or no development, or declining production, were grouped by operators this year in preparation of their estimates of potential 1939 production, showing 91,000 bbls. classified in this listing.

MICHIGAN

Completions by Counties for 1938

Field—	Comp.	Prod.	Dry	Gas
Adams	9	596	4	0
Bentley	34	2,686	3	0
Bloomingdale	94	41,937	22	0
Buckeye	83	19,658	8	4
Clayton	16	3,370	2	0
Columbia	1	16	0	0
Deerfield	1	10	0	0
Dorr	30	3,020	10	0
Edenville	45	15,785	8	0
Edmore	6	0	2	4
Freeman	43	77,608	5	2
Fremont	1	0	3	0
Overisel	61	35,852	6	2
Salem	59	13,135	6	1
Sherman	22	7,238	2	0
Loomis	1	250	0	0
Skunk Lake	4	810	1	0
Stewart	24	8,347	6	0
Trowbridge	6	80	3	0
West Branch	32	2,210	5	0
Winegars	48	11,834	4	0
Winfield	7	0	2	5
Wise	8	30	4	2
Wisner	1	70	0	0
Crystal	1	50	0	0
Monterey	34	7,145	9	0
New Haven	2	0	1	1
Porter	7	907	1	0
Secord	4	100	3	0
Geneva	1	0	1	0
Broomfield	2	0	2	0
Currie	5	400	3	0
28-16n-13w	1	126	0	0
Newark	1	0	1	0
14-15n-14w	1	200	0	0
Lincoln	2	0	1	1
Wildcats	303	1,705	278	6
Total 1938	1,000	227,761	406	28

Completions by Months

Month—	Comp.	Prod.	Dry	Gas
January	69	13,930	22	2
February	62	10,546	20	2
March	57	9,534	20	4
April	84	14,517	32	2
May	92	9,003	47	1
June	90	12,075	35	2
July	87	7,827	41	1
August	76	15,500	37	3
September	83	28,288	35	1
October	138	63,221	54	6
November	98	54,938	35	2
December	64	15,769	28	2
Total 1938	1,000	255,148	406	28
Total 1937	932	307,806	277	69
Difference	68	52,658	129	41

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ENGINEERING and OPERATING

In This Issue

CONTINENTAL PLANT PROVIDES POWER FOR FIELD OPERATIONS
By Harry F. Simons ..... *Page 180*

Power requirements for operations in the Graber field, Kansas, are supplied by current from a central power plant belonging to Continental Oil Co. with 80 wells and two drilling rigs in this area. The author briefly describes conditions under which the field was developed and presents an outline of the principal features of the equipment for generating and distributing current. Because of varying demands for power, the plant was designed to meet the wide fluctuations which must be anticipated when the two drilling rigs are in operation.

PRACTICES USED IN DRILLING AGUA DULCE, TEXAS, DEEP TEST
By Neil Williams ..... *Page 182*

In drilling to greater depths than have been reached previously in Texas, the operators encountered and overcame difficulties which confront those who seek to test lower horizons in the Gulf Coast area. A description of surface equipment accompanies an account of drilling procedures; this deals with methods for combating trouble arising from heaving shale, casing program, and the manner in which mud was handled. The well is the second deepest in the world; much time was spent in drilling the thickest section of shale which has ever been penetrated. The well was being drilled with 8⅝-inch hole at 13,728 feet when it was decided to go no further; this is the largest hole ever carried to this depth, according to records of drilling operations.

CALIFORNIA LINE SAVED FROM ABANDONMENT BY INSERTION JOB
By W. E. Archer ..... *Page 196*

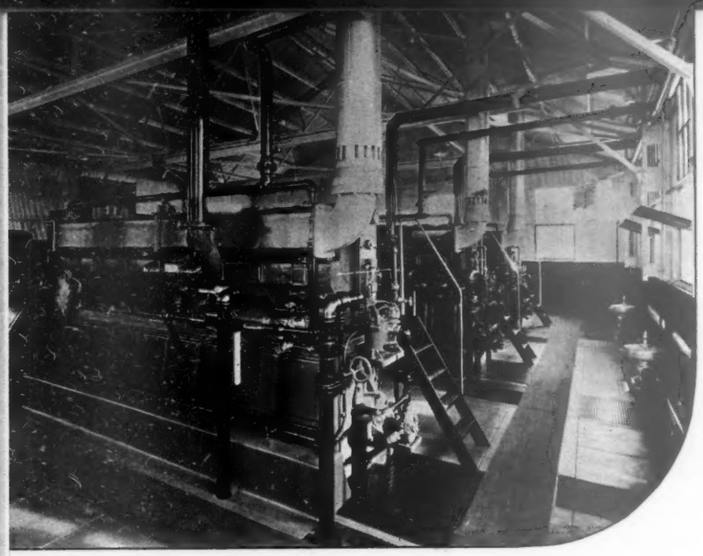
The method by which an 8-inch line was inserted in a 10-inch line is discussed; details are given regarding the manner in which tractors were used in carrying out this operation. The original 10-inch line in the ground had been laid in a suburban area which was subsequently built up and paved. For this reason there were several advantages in resorting to the insertion of a smaller new line inside of the old.

OPERATING IDEAS ..... *Page 192*

METAL PROGRESS—*By W. L. Nelson* ..... *Page 195*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 197*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 198*



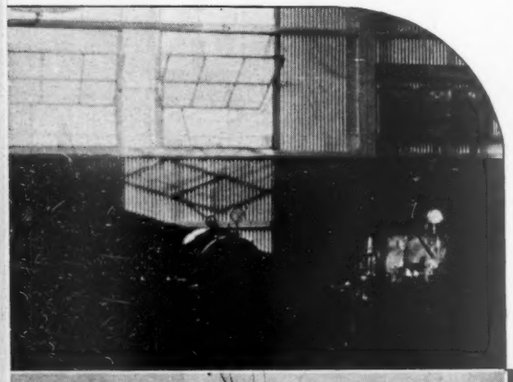
Three eight-cylinder gas engines drive the generators

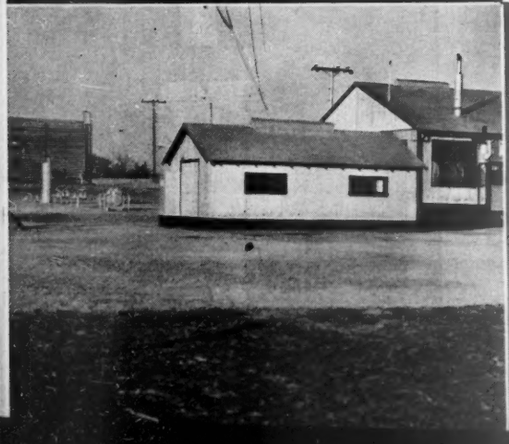
Continental Plant at

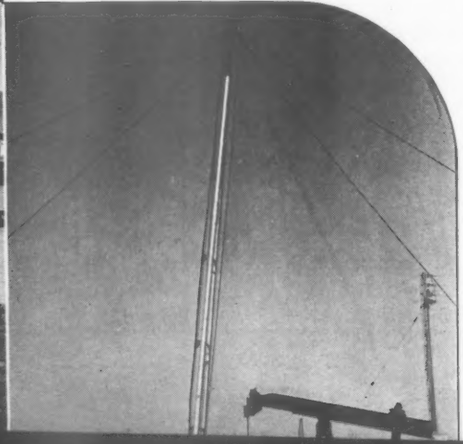
By HARRY F. SIMONS

Standardization of prime movers has enabled the Continental Oil Co. to use a central power plant for the complete operation of properties in the Graber field, McPherson County, western Kansas. An electrical generating plant, located on the C. Jones farm in the SE quarter of Section 31-21s-1e, manufactures current for the pumping wells owned by Continental, an electric rotary drilling rig, a cable tool rig, pipe line pump, and for lighting all of the company houses.

The Graber field was opened in May, 1934, with the completion of the Continental Oil Co. No. 1 Graber, NE NE NW Section 32-21s-1w, at total depth of 3,298 feet. Acidizing increased the production of the well from 870 bbls. to 1,294 bbls. of 41-gravity oil. The discovery well and those drilled immediately afterwards were drilled with cable tools; later and present practice is to drill to the top of, or a short distance into, the Hunton lime with the rotary and then complete with the cable tools. Of the 113 wells in the field, 80 are owned or partially owned and operated by the Continental. It was for producing this large group of wells and for developing the field that Continental designed the central electric power generating plant.







Centrifugal pumps for circulating water; cooling tower and pipe line pump house; pumping unit with mast

Power generating equipment is housed in a building 50 by 40 feet made of sheet metal on structural steel; construction of the building is heavy enough to support an overhead crane used for handling engine parts whenever mechanical repairs are needed. The floor is of waxed red pigmented cement, covered by rubber stripping on the areas receiving the heaviest wear. The building has steel windows which are permitted by circular screens to open outwardly. Two fan-driven heat circulators in the corners of the building keep an even temperature during the winter. During the summer the heating element is disconnected and the fan used to help cool the interior. Hand tools are kept on a special veneer board; condition of tools and board resemble a good hardware mechant's display. A heavy steel work bench is also provided.

Gas-Engine Power

Three 8-cylinder, 400-hp. at 400 r.p.m. Cooper-Bessemer gas engines are used for driving the generators. These engines have a bore of 11½ inches and a stroke of 13½ inches and at present are designed to operate on gas having a rating from 500 to 1,000 B.t.u.'s per cubic foot. By slight changes on the intake manifold they can be made to accommodate either richer or leaner gas. The engines are readily convertible to Diesel operation.

Gas for fuel is taken from the wells and delivered to the plant through a 3-inch regulator and meter. One well, No. 4-A F. A. Hetzke, SW SW SE Section 20-21s-1e, is a combination well producing oil from the Hunton and gas from the chat; the two formations are separated by a packer and the gathering system is so arranged that when gas from the well is not needed the production of gas from the chat is automatically discontinued. Take-offs from the buried 4-inch header for fuel for the individual engines is through Crawford sensitive regulators.

Air for the engines is admitted through large air-cleaners located outside of the building. Circulating water for the engine jackets is treated to prevent corrosion and scaling; a large surge tank located just outside the building prevents air-locking or slugging in the line. A centrifuge machine, located in one corner of the building, is connected to the engine crankcases and once a week the lubricating oil is cleaned and returned to the engines. Only small amounts of make-up oil are required from time to time.

The engines are all equipped with relay type governors that are specially designed for parallel installations and highly fluctuating loads. Safety

Plant tools are kept on this special board

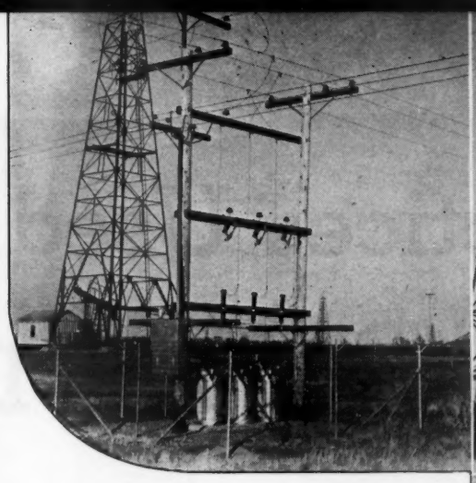
switches cause a horn to blow in case an engine is heating or the oil pressure is low. The engines are started with compressed air provided by a Worthington air-compressor driven by a 3-hp. electric motor; an engine-driven air compressor is provided for starting the engines in case of a complete shutdown covering a considerable period. Air tanks are located outside the building.

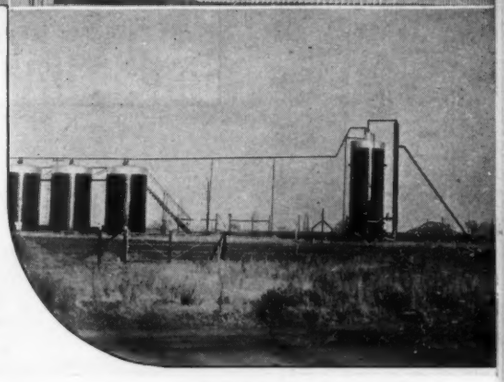
Three Wilson-Snyder 4-inch BA-7 centrifugal pumps capable of producing an 80-foot head are provided for handling the circulating water. One pump circulates the water through the engines and a second one circulates the water through the cooling tower located outside of the building. The third pump is used for a standby. All of them are driven by 20-hp., 3-phase, 60-cycle motors running at 1,750 r.p.m. and directly connected to the pumps; the motors are designed to handle two voltage ratings with corresponding amperages.

Each of the engines is connected directly to a 2,300-volt, 83.6-amp., 3-phase, 60-cycle a.c. Westinghouse generator operating at 400 r.p.m. The generator has a power factor and the field is designed for exciting by 42 amps. and 125 bolts. The individual exciters are direct current shunt wound, 125 volts, 60 amps., mounted over the generator shafts and driven by them through V-belts.

Switchboard for controlling engines and generators is located in the center of the north side of the plant, just inside the building from the transformers. Divided into five panels, instru-

Power Graber





Lease transformer bank; belt house and motor shed; storage tanks, gun-barrel and treating equipment

ments are grouped for ready control of machinery. A syncroscope attached to the left panel is used when putting another unit on the line.

One panel contains the field meter switches and cutouts; the second holds the constant voltage regulator, switches for putting current through the regulator, switches for each of the generators and exciters, and equipment for reversing direction of current through the regulator to prevent welding of points; the third holds the manually operated voltage regulator and recording and maximum demand meters; the fourth has voltmeter, ammeter and kilowatt meter showing the generator output and voltmeter and ammeter for showing exciter output; the fifth panel has a control for the speed on each engine, voltage rheostat, switches for each engine and a switch for the syncroscope. The syncroscope is attached to a separate board, hinged on the fifth panel and shows the line voltage and the voltage of the unit to be added. When the two coincide, closing of a switch throws the units together.

Distribution of Current

Current inside the building carries 2,400 volts but immediately on leaving the building it is stepped up to 11,000 volts for transmission throughout the field. A transformer bank located on each lease reduces the current to 440 volts; for the camp houses it is further reduced. From two to eight wells are served by each transformer bank. The rotary and cable tool drilling rigs are each provided with transformers mounted on skids that are moved as parts of the rigs.

The pipe line pump station is located just south and west of the main generating plant and houses a 75-hp. motor driving a 10 by 4¾-inch Gaso pump which moves the oil through the 36 miles of line to the main station at Valley Center, Kans. The station moves from 2,500 to 3,000 bbls. daily.

While Continental owns or operates 80 wells in the field, all of them are not on the line at the same time. Peak load is reached during the daytime when 60 wells are pumping simultaneously along with the other equipment carried. Four wells are pumped at night to insure against load requirements becoming too small. As the allowable is small, none of the wells have to pump 24 hours daily to get its share of the oil; for this reason operators resort to the practice of staggering pumping requirements.

For pumping, first wells in the field were equipped with jack shafts, belts, bandwheels, beam, and bullwheels. The former three along with electric motors were covered by the conventional engine shed and belt house. This installation is more expensive but has the added advantage of being able to perform remedial work on the wells. Later practice eliminated the jack shafts and then the belt houses; the electric motor and gear box being covered by a 10- by 12-foot building adjoining the derrick. Practice now is to install unit pumpers that are weather-proof and require no covering.

Electric motors are all 440 volts, 35 amps., 15 hp. capacity with the exception of the older installations which used slightly larger prime movers.

High Cold-Test Oil

The oil has a heavy paraffin content that tends to clog the gathering and pipe line system but this is treated before it enters the lease storage tanks. Salt water accompanying the production is also treated at the lease tanks and moved by an electrically driven pump to the P. Westerman lease where a dry hole is used for a disposal well. The salt water disposal well was drilled to 4,076 feet where a granite wash was encountered and the hole was cased. No trouble is experienced in pumping the brine into the ground; as high as 1,000 bbls. daily have been pumped into it with no difficulty. Most of the wells are equipped with 86-foot steel derricks but on some wells masts for pulling rods and tubing are used. Steel tubing boards are installed on all derricks in accordance with Continental's safety program.

The rotary rig and the cable tool rig are engaged in drilling inside locations with the latter sometimes being used for remedial work. For rod and tubing jobs a motor driven winch mounted on a truck is used.

About 15 days are required to drill the hole and set pipe on top of pay horizon with the rotary. It is of the conventional type with a unitized drawworks and all of the machinery, including the circuit breaker and transformers are mounted on skids. Under moderately favorable conditions the rotary can be rigged up in one day. About 150 feet of 12¼-inch surface pipe is set and the remainder of the hole to the top of the sand is drilled with a 9-inch bit. Seven-inch pipe is then set and the rotary moved to the next location and the cable tool rig installed.

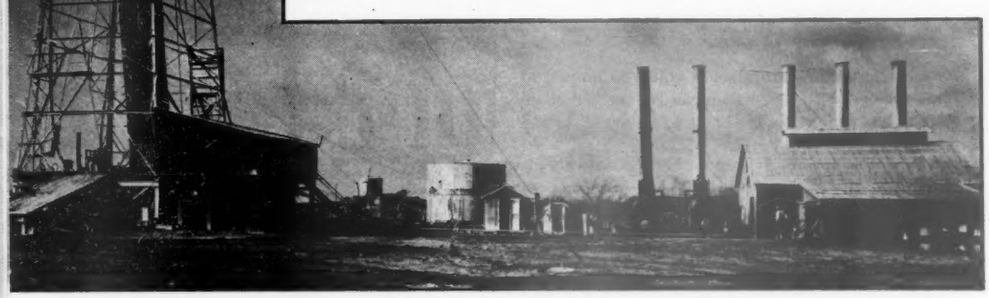
Drawworks on the rotary is driven by a 125 hp., 440 volt, 60-cycle, 3-phase a.c. motor operating at from 735 to 880 r.p.m. The mud pump uses the same size prime mover. In December the rotary was drilling the J. C. Goering No. 9, NW SE SW Section 29-21s-1w; the cable tool rig was tempo-

(Continued on Page 190)

Air cleaners, air storage tanks and surge tank are outside building

Practices Used in Drilling Agua Dulce Deep Test

By NEIL WILLIAMS



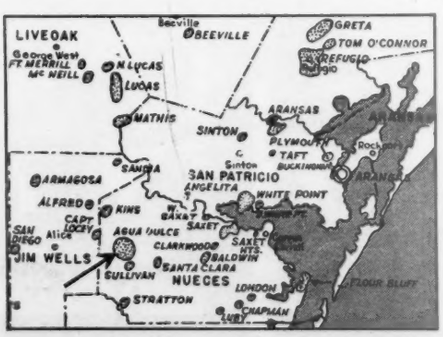
Union Producing Co. No. 1 Minnie Brown, Agua Dulce field, Nueces County, Texas. Photographed by Hughes Tool Co. Drilling to 13,728 feet nearly a year

Through accumulating knowledge and experience gained in the drilling of each successive shale well, coupled with constant research and the development of more effective practices and facilities for control of shale, Gulf Coast operators are making constant headway in overcoming the hazards and problems of heaving shale, long the barrier to deeper exploration and development in many areas of the district.

Exemplification of this is given in the recent successful negotiation by Union Producing Co of more than 5,700 feet of open hole through heaving shale encountered in the drilling of its No. 1 Minnie Brown, deep exploratory test in the Agua Dulce field, Nueces County, Texas. This was the thickest section of shale ever penetrated, and the fact that the hole, carried to a total depth of 13,728 feet, was left clean with the well mechanically in condition for further drilling if this had been desired, makes the accomplishment notably outstanding.

At the depth of 13,728 feet, where drilling was stopped, the well had more than broken previous depth records for wells east of the Rocky Mountains, and being exceeded in depth only by Continental Oil Co. No. 2A-KCL, Kern County, California, which reached 15,004 feet, it holds the distinction of being the second deepest test in the world.

Significant, however, is the fact that at no time was there any intention of attempting to set any new records. Only the desire of the company to gain information concerning lower horizons in the area that it might be better guided in its development of the field inspired continuation of drilling to its present depth. Persistence and patience of the operators in the face of a large shale section was rewarded by success in realizing the objective.



Map by W. W. Zingery

Area where the deep test was drilled

Drilling Procedure

As an exploratory test of lower horizons, regular producing sands and known formations of the field were passed up and cased off. With location in the highest structural position in the field, the well was spudded in January 28, 1938. To facilitate drilling at great depths, large sized hole was called for. In starting 28-inch hole was carried to 410 feet, in which 21½-inch pipe was set and cemented at 399 feet for surface protection. The hole then was reduced to 20¼ inches, which size was drilled to 4,225 feet, in which a protection string of 16-inch casing was run to 4,128 feet. Incidentally, this string was the longest of its size ever run, and was made up of 84-pound threaded and collar pipe. From the bottom of the latter casing, 14¾-inch hole was carried to 8,024 feet, and 10-inch casing cemented in it at 8,007 feet, well below the deepest of the known producing horizons in the field. This string of pipe, the last to be set in the well, consisted of 50.5-pound external upset pipe. It was run without trouble, and cemented with 1,500 sacks of slow set cement, the job being completed on May 24.

With 10-inch plug drilled out, the hole then was reduced to 8⅞ inches. This size hole was carried to 12,880 feet, with the remaining 848 feet of hole to the total depth of 13,728 feet being reduced to 8⅝ inches. The 8⅞-inch bits were replaced with 8⅝-inch bits at the last because it was figured the smaller bits, although only slightly smaller, would be a little easier to handle. In no other well has 8⅞-inch, or 8⅝-inch hole been drilled anywhere near these depths.

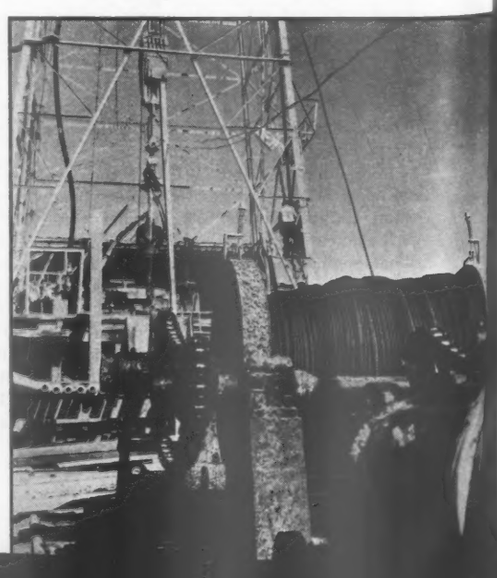
At 8,075-92 feet the well drilled through 17 feet of sand and sandy shale, the only appreciable break encountered in the shale from the bottom of the 10-inch casing to the bottom of the hole. Not only was this the thickest shale section ever drilled but in nearly every instance before, shale sections have been broken by occasional sand or sandy shale strata or streaks.

Jackson shales were topped at 8,450 feet. However, 8,750 feet has been determined as marking the approximate top of the troublesome shales. The latter determination was made in later work in the well in which it was indicated that two major cavities, one at about 8,795-8,850 feet and the other at around 9,170-9,200 feet, and at least one minor cavity, located around 10,280 feet, had been formed during drilling.

While drilling continued to 9,613 feet without any serious interruption, indications of impending trouble were given. One one occasion, with bottom of hole at 9,052 feet, effort was made to run an electrical coring survey. In this attempt it was possible to get the instrument down only to 8,765 feet. At the time it was believed that failure to get down was due to hitting a shoulder. On several occasions pipe pulled heavy and frequent reaming was necessary. When this occurred, it was thought that the trouble came as the result of mechanical conditions. All along, walling material was continually being caught in the shale shaker. From what has been learned since, it is realized that these returns were due to the sloughing of the walls of the hole in the formation of cavities. Up to this time a full realization of what was taking place had not arisen.

The depth of 9,613 feet was reached July 1, marking a definite turning point in the well. At that depth while coming out of the hole the pipe pulled unusually hard up to a point at about 8,750 feet, which was identified later as near the top of the troublesome section. In attempting to go back in, the pipe was run to 8,850 feet when the pump choked, and the pipe had to be pulled back to get circulation; at that time the pipe almost stuck. The excellent condition of the mud, at the time, saved the day; however, the pipe was pulled with difficulty. No attempt was made to force the pipe, but by holding a strain on the string, the pipe would release enough to pull it a little

Running wire line coring unit



GOODALL *long-life* ROTARY HOSE—BARNEY COUPLING COMBINATION

THE stemless, clampless features of the Barney Coupling, plus the unique design and construction of the Goodall Long-Life Rotary Hose, continues to make rotary drilling history. This now famous hose and coupling combination is consistently breaking its own record for drilled footage, this time the completion of Union Producing Company's 13,725' hole. It is only natural that more and more discerning operators choose it for modern deep drilling because of the added margin of safety, trouble-free maintenance, and greater return on investment.

The Barney Coupling is available only as an integral part of the Goodall Long-Life Rotary Hose.

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Crew, 6 p.m. to midnight, left to right, A. M. Wigington, night drilling and production superintendent; Ray Davis; P. L. Garner, driller; A. W. Bruckmiller; Donald Griffith; D. L. Lambreth (sitting)

Crew, 6 a.m. to noon, left to right, H. L. Bock, E. L. Long, A. L. Herschap (standing), W. A. Burchmiller, H. L. Hart, M. W. Melvin, driller

further, and the procedure would be repeated. Step by step the pipe was pulled. The well then was shut down pending decision on what procedure to follow.

Down to this stage in the well, the hole had been drilled with conventional "water" drilling mud. It since has been learned that the water in this mud had been responsible for the disintegration of the shale at certain places, causing the formation of previously mentioned cavities. These cavities were spotted by carefully feeling the drill pipe in and out.

After a careful study of the situation, it was decided, for resumption of operations, to replace the conventional water-mud with a mixture of silicate of soda, a product which had been used in drilling 16 heaving shale wells with increasing degrees of success. A powdered form of the product was provided. Mixed with dry salt this was fed through a hopper into the drilling mud, giving a liquid containing 60 volume per cent silicate of soda. The mixture was such that shales similar in character to bentonite would remain intact when immersed in the liquid; when used as drilling fluid it was capable of eliminating hydrous disentregation of the hole walls.

With the use of silicate mud, it was necessary to make a number of changes in the mud system, chief of which was the erection of covering for the pits to protect the silicate mud from rain. Provision also was made for recovery of fluid splashing on the derrick floor, by having it drain into the cellar, where it could be jetted back into the system. Because, in using silicate of soda, the same mud is circulated constantly, mud treatment facilities at the surface have been designed to remove all shales ground up mechanically by the bit. In the use of water-mud, new mud is made continuously; this necessitated constant treatment by addition of water and chemicals to reduce the viscosity and maintain desired characteristics.

For removal of all shale particles, two shale shakers were provided. The first, located on the discharge ditch from the well, had a 40-mesh screen which removed only the larger shale pieces. At another point in the treatment of the mud (see accompanying drawing), an 80-mesh screen, capable of removing the fine particles of shale and sand, was operated. The latter screen, however, was of such size as to permit weighting material to pass through with the fluid. Weight of the liquid phase of the silicate of soda without weight admixtures was 11.5 pounds but sufficient weighting material was added to maintain the weight around 13 pounds while drilling.

The mud system changes were made, and the water-mud replaced with silicate mud on July 15, with the drill pipe at 8,750 feet. Carefully drilling and cleaning out bridges, reaming out back places and feeling the way down, bottom at 9,613 feet was reached without undue difficulty. By 7 a.m., July 20 the hole had been drilled to 9,815 feet, at which depth, in order to change bits, the first trip out of the hole after changing to silicate mud was undertaken. Although there was a tendency for the pipe to stick at places (which were later spotted as cavity sections in the upper portion of the hole previously drilled with water-mud) the round trip was made without great trouble by working the pipe in and out slowly and cautiously, cleaning out the shale accumulations. Back on bottom good progress then was made down to 10,523 feet, which depth was reached July 27.

At the latter depth, the hole was found to be taking off; considerable time was spent in reaming and trying to straighten hole, and in working out a satisfactory coring technique. Wire line coring equipment was installed on July 29, with bottom at 10,676 feet. Conventional drilling bits, which had been used, were replaced with two-way and three-way core head bits, with which the remainder of the hole was drilled. Very little new hole, however, was made during the next month.

Constant working in the hole at this depth with frequent raising and lowering of the pipe, and numerous round trips, are believed to have contributed toward much of the trouble later experienced with the cavity sections in the upper part of the hole. That the working of the pipe,

(Continued on Page 185)

Crew, midnight to 6 a.m., left to right, Linwood Nelson, Ed Lewis, C. M. Martin, H. J. Shieffield, B. Kelley, driller; G. W. Fincher

Crew, noon to 6 p.m., left to right, George Ferguson, driller; Ted McCauley, Floyd W. Kelly, G. B. Harding, Carl Clopton, M. R. Kelley

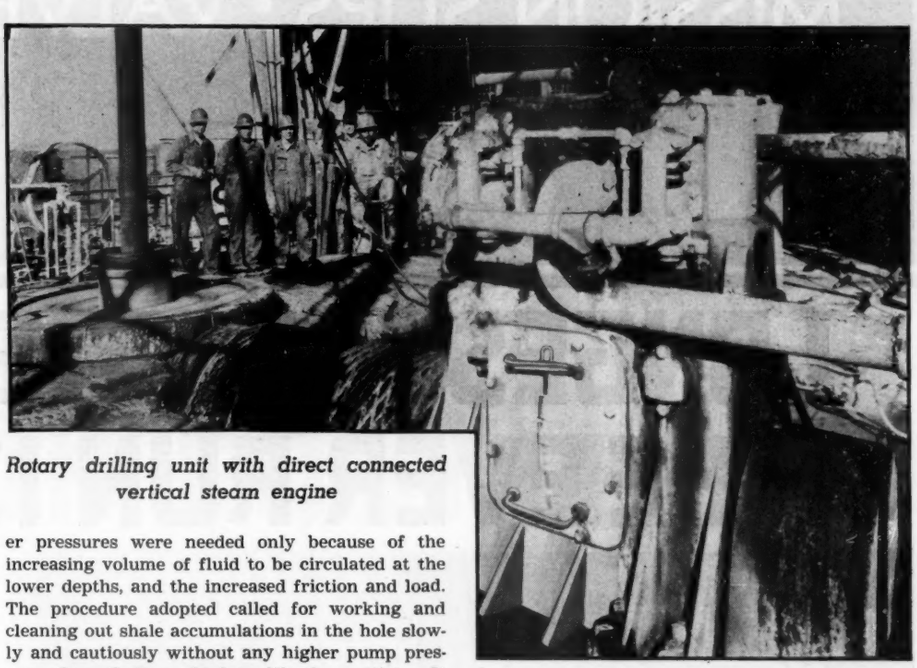
in correcting the trouble at the lower depth, aggravated the sloughing and caving conditions, in the cavities formed above, has been definitely indicated. It was this caving that took much time later in getting in and out of the hole.

Up to this time, the hole had been made with only one mud pump. This pump, a 20-inch pump with 7-inch liners, was capable of building up a pressure of only 1,150 pounds. Another 20-inch pump was included in the rig setup but this was used in mixing of mud and served only as a standby for the other pump so far as well circulation was concerned. Also, there was a 16-inch pump with 7¼-inch liner, but this was used for circulating mud through a cooling spray, and for feeding the centrifugal desander and degasser used in earlier drilling.

A. F. SANBERG

With deeper drilling and greater required circulating pressures, the pump in use proved inadequate. With a view to providing a little greater pressure, the 7-inch liner was replaced with a 6½-inch liner. This was on September 9, when the bottom of the hole was at 10,912 feet; the pressure was boosted to around 1,250 pounds. With this pressure the hole was drilled to 11,317 feet. At that depth the 15 by 6½ by 20-inch pump was replaced with a new 18-inch pump with 6-inch liner (14 by 6 by 18 pump), which carried the hole to 11,510 feet. There, because of the need for additional pressure, an additional 14 by 7½ by 14 pump was set up and compounded into the 18-inch pump, making available a circulating pressure of 1,750 to 1,800 pounds.

It is significant to note, however, that at no time did the operators have any desire to circulate with any excessively high pressures. Greater pressures were needed only because of the increasing volume of fluid to be circulated at the lower depths, and the increased friction and load. The procedure adopted called for working and cleaning out shale accumulations in the hole slowly and cautiously without any higher pump pressure than that required to lift the cuttings. It was learned that any hurrying of the pipe and attempts to clean out the bridges with high pressures would only tend to aggravate the trouble.



Rotary drilling unit with direct connected vertical steam engine

Pumps and Boilers

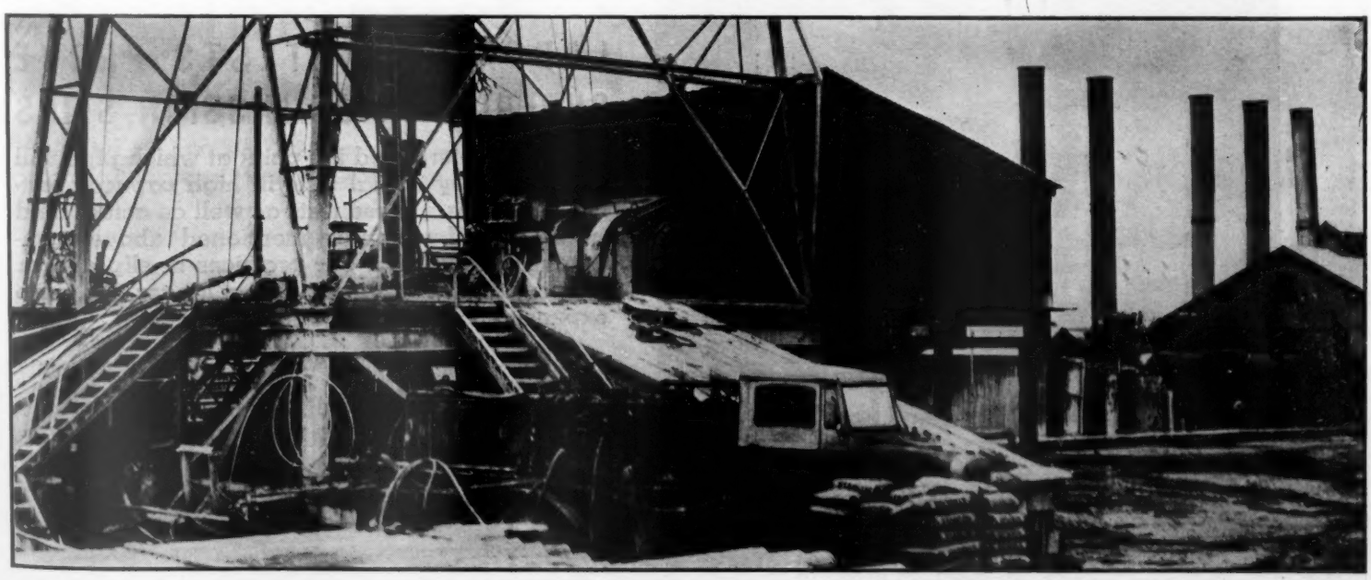
With the additional pump facilities provided, steam requirements were too great for the capacity of the three boilers originally installed, although each had a capacity of 125 hp. with 300 pounds working pressure. Consequently two more boilers were set up. Original boilers were housed, but as there was no room under cover for the new boilers, these were placed outside without covering.

Before this time it was not considered advisable to move in additional equipment and facilities, as it was not known just how much more drilling would be done. It was known that at any time the hole might be abandoned, as drilling had been carried that far only because of the patience and persistence of the operators in trying to go just a little bit deeper each time. Ordinarily, most any other operator might have abandoned the hole long before reaching these depths.

By this time, more than 3,500 feet of open hole had been drilled in the shale, which in itself is a record achievement.

Two attempts had been made with bottom at 10,792 feet to run a string of 7-inch casing to case off the trouble zone. The attempts were given up when the operators were unable to get the pipe to bottom, the first time getting only to 9,600 feet and the second time to 9,400 feet. As it was not desired to quit the hole at that depth, drilling was resumed with the cavity section above, open. It might be mentioned at this time, however, that the operators had no definite ultimate depth to reach as their goal. It was only desired to make a thorough exploratory test of the deeper horizons to guide the company in its development program in the field. This was accomplished with the hole drilled to the total depth of 13,728 feet, which revealed only a continuation of the shale to that depth. That depth was reached December 30, 1938, after approximately a year of drilling. There, although the hole was clean and in condition for continued drilling, operators had

(Continued on Page 188)



Cementing back to test shallower horizons passed up in drilling to a depth of 13,728 feet

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DRILLED *to*

LONGEST STRING OF 4½" PIPE EVER RUN 13,728 *feet*

J. A. (Dutch) Kelley, Field Superintendent of Drilling and Production, and Charles A. Sullins, Petroleum Engineer.

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By running this **world record** string of 4½" pipe, we have proven that slips longer than the Mission standard slips are not necessary for handling any strings of pipe that can be used for drilling.

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We have determined the point at which pipe will bottle-neck by actual tests in high capacity testing machines. These tests as well as actual field tests—one of which is mentioned above—conclusively prove that our practices in slip design are sound; and in particular that longer and more expensive slips are not necessary.

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CHARTS AND DESCRIPTIVE MATTER COVERING THE ABOVE LABORATORY TESTS, WILL BE SUPPLIED ON REQUEST.

"SOLD THROUGH SUPPLY STORES EVERYWHERE"

PISTON RODS • GLAND PACKING

13,728 FEET

PUMPS 100% MISSION EQUIPPED.

AT THE RIGHT is a picture of one of the pumps used in the drilling of Union Producing Company's Minnie Brown Number 1. Mission Valves, Mission Pistons, Mission Piston Rods, and Mission Gland Packings were used on these pumps which were compounded to produce 2,300 pounds pressure.

MEMBERS OF MORNING CREW: (reading from left to right) M. W. Melvin; W. A. Bruckmiller; F. L. Long; A. L. Herschap; H. L. Bock; R. L. Hart.

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learned what they wanted and it was not considered economically feasible to carry on. Up to then the test had cost more than $300,000.

Through experience in working with the hole it was learned that much trouble could be avoided by exercise of precaution in pulling pipe. The practice was developed of pulling only 6 to 10 thribbles at a time and then pumping in mud to minimize the swabbing effect. The pipe had a tendency to pull hard when more pipe was pulled.

C. A. McDowell, general manager, South Texas district, Union Producing Co.

It was determined fairly definitely that practically all sticking of pipe occurred at those places where existence of cavities were spotted, all of these being in that section of the shale originally drilled with water-mud. The positions of these cavities were carefully noted by the feel of the drill pipe while going in and out of them. Particular precautions to prevent sticking were taken at these points. In going into the hole, the pipe would be slowed up at a point just above where the top of the cavity was known to be. Then, by carefully working the pipe and circulating, any bridges or sloughing of shale into these cavities would be slowly cleaned out until the pipe could be lowered easily. Usually it then could be slid on down to near the top of the next cavity. In coming out of the hole, the operation would be reversed from bottom up. Clear of cavities the pipe would pull light. Below the point at which silicate of soda mud was used first, there has been no indication of any major breaking down of the hole.

Experience gained in work with this well proved that it is not necessary to maintain circulation in drilling through heaving shale. It is interesting to note that on numerous occasions the pipe hung rotating in the hole without circulation several hours at a time. About 200 trips were made with wire line while using wire line core barrels, and each of these trips required that the pipe remain at least an hour without circulation. At all times the pipe remained open.

Throughout the drilling of the shale, actual digging was easy making it unnecessary to change bits frequently. On one trip, the bit was kept on bottom 17 days. Drilling, however, was slow due to the fact that very little weight could be carried. At the end, only one point was being held on the indicator. With coring time, an average of around 30 to 50 feet of hole was being made daily at the end. Cores were being taken every 30 feet. Although round trip was speeded up toward the end due to increased knowledge of conditions and improved technique in controlling the shale, round trips sometimes consumed considerable time. This was occasioned by the necessity of feeling the way down through the cavity section in the upper portion of the shale. It also was necessary sometimes to ream out particularly bad places. After getting below the cavity section, the pipe could be run in much faster.

It is notable that the entire hole, below 8,024 feet, was drilled with 4-inch drill pipe; this is the longest string of this size drill pipe ever run. Exclusive of the tool joints, the 4-inch pipe weighed 16.60 pounds per foot. With tool joints the weight was 17.619 pounds, a total weight in the air of 242,848 pounds. In the hole it weighed 194,521 pounds.

Other equipment on the rig was correspondingly large and heavy, being assembled with a view toward making a deep test. The rig was company owned and operated and included among its main units, in addition to those previously named, a 136-foot, 800,000-pound (without relegs) steel derrick with 30-foot base; 14 by 14 twin-cylinder, horizontal steam engine for drawworks

(Left) J. A. "Dutch" Kelley, drilling superintendent; (right) C. A. Sullins, petroleum engineer, Union Producing Co.

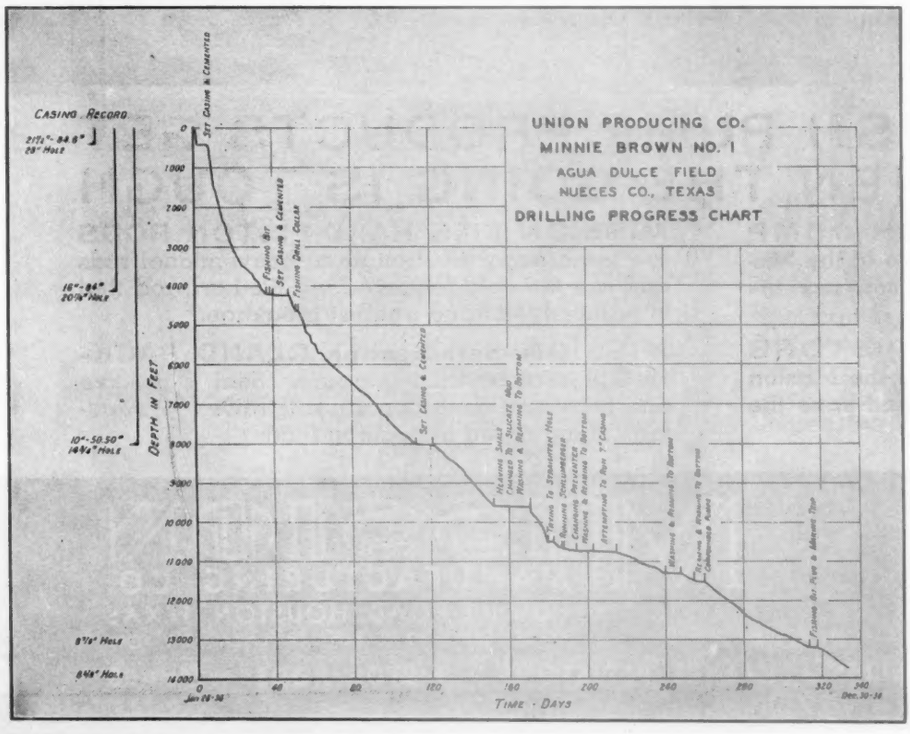
use; 10-inch drawworks with 7½-inch line and jack shafts, and 54-inch brake drums, equipped with hydromatic brake; 7½-inch, 300-ton swivel; six 42-inch sheave crown blocks, and 5-sheave traveling block; 27½-inch oil bath rotary driven directly by a 7¾ by 7 vertical steam engine; 16,000-foot capacity sand line reel for wire line coring and driven by a 10 by 10 steam engine. On the latter five-eighths inch galvanized sand line was used. For drilling, the blocks were strung with 10 lines of 1⅛-inch line.

At the end, the drilling hook-up consisted of a 13⅜-inch pressure operated master gate on bottom, on which was a 13⅜-inch, 6,000-pound test pressure operated preventer, with an additional 13⅜-inch preventer on top. A 4-inch standpipe was provided for drilling use, with an additional 3-inch standpipe for a circulating head and stuffing box used for running the wire line. Also at the end, the pump installation for wall circulation consisted of a 14 by 7¼ by 14 pump compounded into a 14 by 6 by 18 pump. In addition there was a 15 by 7¾ by 20 pump for mixing and gunning the mud in the pits, and the small 16-inch pump for cycling mud through the cooler spray and the fine-mesh shale shaker in final treatment of the mud.

The well was drilled under the immediate supervision of J. A. "Dutch" Kelley, toolpusher and drilling superintendent; A. M. Wigington, night foreman; C. A. Sullins, district petroleum engineer, with O. W. Van Dyke, engineer for Philadelphia Quartz Co., directing the silicate mud phase of operations. Special credit also is given C. A. McDowell, division manager, and A. F. Sanberg, assistant division manager and superintendent.

Stratigraphically, the well was in the Yegua when drilling stopped. This formation was topped at 12,000-12 feet. Overlying this, the Cockfield was topped at 10,584 feet, and in turn the Jackson at 8,450 feet.

Attempts are now being made to complete the well in one of the regular producing horizons of the field. The hole was plugged back first to 6,885 feet, where casing was perforated in a 6,850-foot sand, from which an offset well is producing. This perforation resulted in a salt water test, and the hole was plugged back to approximately 5,800 feet, where, as this is written, casing is being perforated in a higher sand.



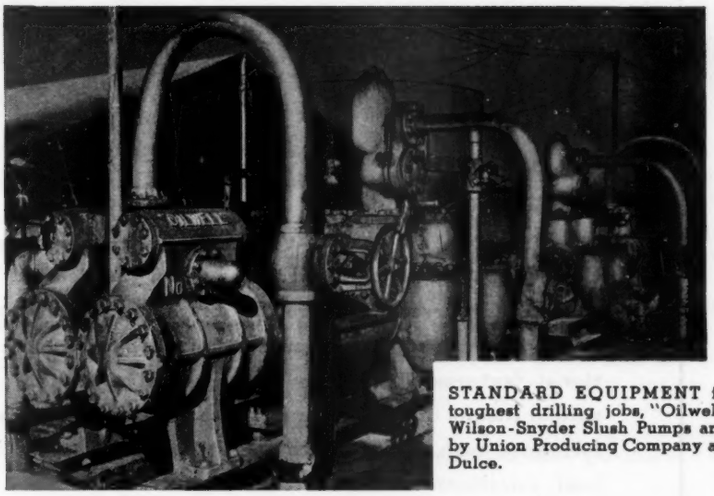
Deepest Test in Texas Drilled in Agua Dulce at 13,728 Ft.

Union Producing Company takes full advantage of drilling unit features in conquering heaving shale

"OILWELL" Rotary Drilling Units have drilled many of the deepest wells. On Union Producing Company's No. 1 Minnie Brown, an "Oilwell" Drilling Unit has played a leading part in overcoming heaving shale and other adverse conditions.

Effect substantial savings by using an "Oilwell" Rotary Drilling Unit! Or adapt an "Oilwell" No. 7 Engine to your present rotary. You'll never go back to a chain driven rotary! Send for descriptive bulletin today.

ROTATING WITH 13,000 ft. of 18-lb. drill pipe suspended from slips in the table while circulating in heaving shale.



STANDARD EQUIPMENT for the toughest drilling jobs, "Oilwell" and Wilson-Snyder Slush Pumps are used by Union Producing Company at Agua Dulce.

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Disposal Plant Uses Tumbleweeds

At some Kansas salt water disposal plants the settling of carbonates is facilitated by the addition of tumbleweeds to the pits. The air-agitated water is passed over baffles into the settling pit where a slowing down of the movement is desired. The operators did not feel that building extra baffles in this pit would be advisable and the Kansas countryside provided little in the way of trees and brush but there were plenty of tumbleweeds blowing about. They gathered up a bunch of these; dumped in the settling pit and accomplished their purpose.

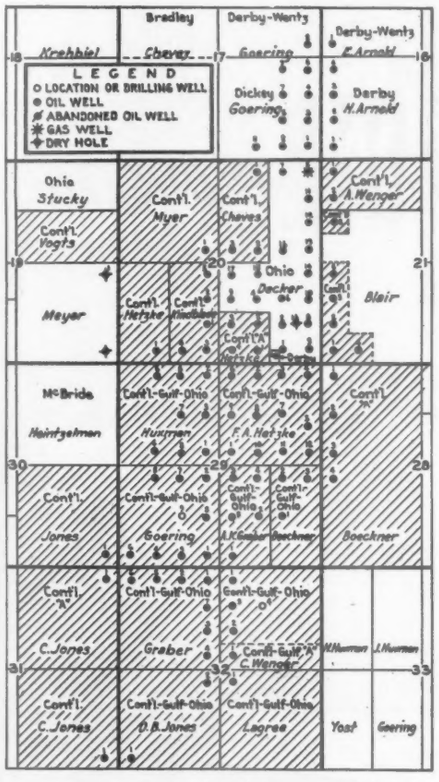
At first glance, tumbleweeds appear to be slightly out of place at these plants; the first reaction being that they must have got there by accident; then it is noticed that they are only in one pit while the other four or five pits are void of this native herbage.

CONTINENTAL PLANT

(Continued from Page 181)

rarily idle but preparing to start another completion.

Probably the most unusual thing about this central power installation is the ease with which it meets widely varying demands for current. While the demand of the production and pipe line pumping equipment can be anticipated, demand of the two drilling rigs is highly variable. One or both may completely discontinue work and thus cut off part of the generating plant load; or both may start up simultaneously and cause a sudden large increase in current requirements. Although the plant is designed to meet this fluctuation within limits, close supervision is maintained to prevent over-loading of individual units in the plant or having more units operating than necessary.



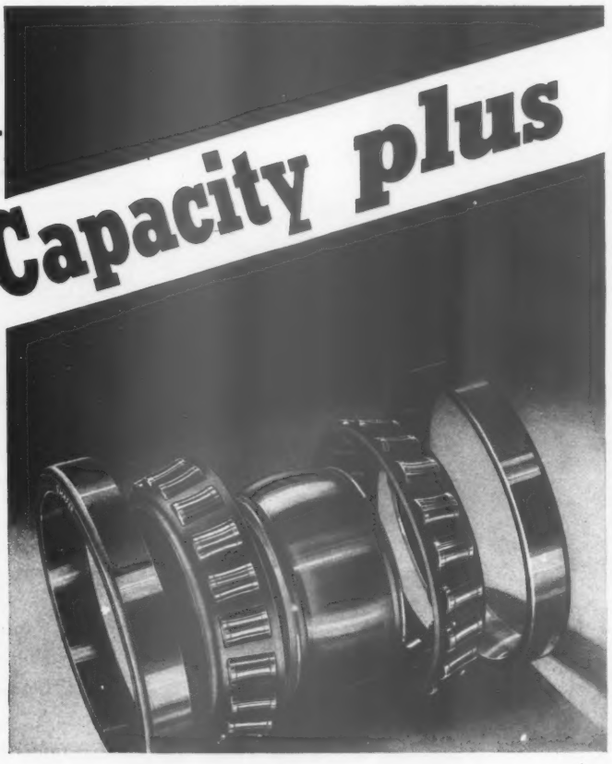
Midcontinent Map Co., Wichita-Tulsa

Plat of Graber, Kansas, field. Hatched area shows properties produced by power from the central generating plant

Five men operate the plant, two men being assigned to the day shift, one each to the other two shifts, and the plant superintendent supervises the 24-hour operation. Office for the plant is located about 50 feet from the main building; a five-room house is provided for living quarters for the plant superintendent and his family.

AC generators and exciters at the central power plant

Thrust Capacity plus



● Shafer CONCAVE roller design provides generous thrust capacity, if you need it and when you need it. The curved rollers and curved races provide for radial, thrust, or combined radial-thrust loads in any proportion, without the need for additional features. They also give integral self-alignment and a simple means of adjustment. These features insure reliable performance even under severe operating conditions of fluctuating load, misalignment, or shaft deflection.

Available in a full range of sizes: Pillow Blocks • Flange Units Take-up Units • Cartridge Units • Hanger Boxes • Flange-Cartridge Units • Duplex Units • Conveyor Rolls • Radial-thrust Roller Bearings

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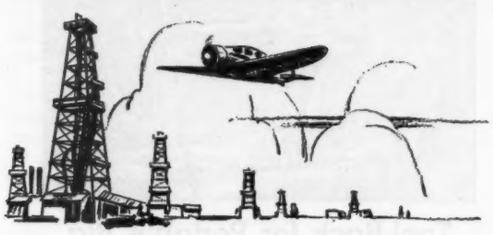
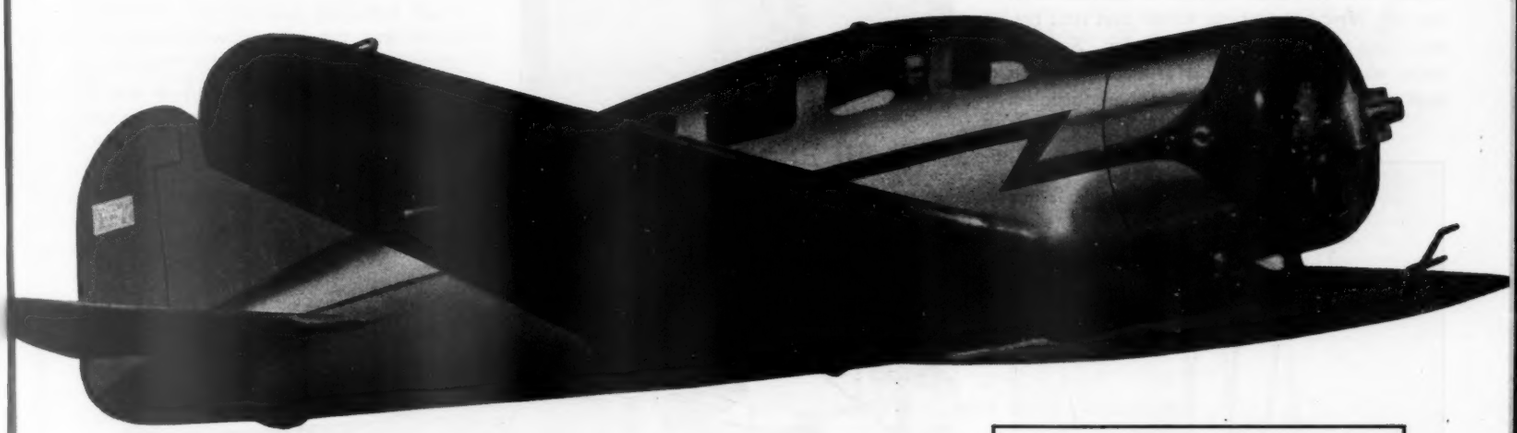
AIRPLANE





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The ALL-METAL Executive is built upon a bridge-like frame giving strength unknown to old types of wood and fabric construction. SPARTAN has introduced to private plane ownership the same metal construction of the Air liners. When you step from your automobile into the luxuriously comfortable cabin of the 1939 Executive, you continue to travel with the safety, quietness and speed that ONLY ALL-METAL construction provides.

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The SPARTAN Executive is THE Airplane with which no other can compare, proof will be on your desk in response to a phone call, telegram or letter.

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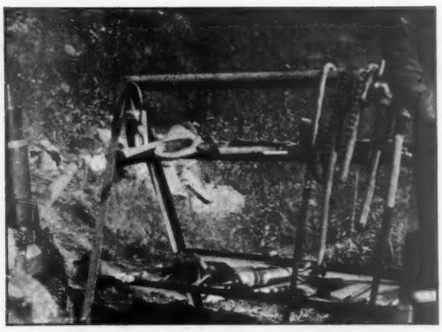
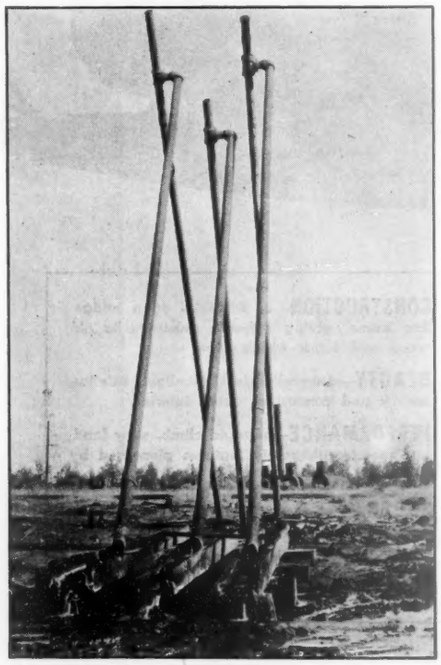
OPERATING IDEAS



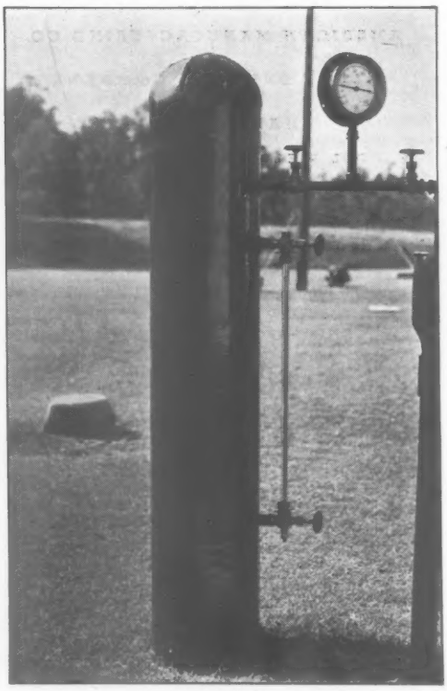
Tool-Rack for Portable Rig

A machinery manufacturer owning leases in Illinois decided to drill them himself; he designed and constructed a portable rig for the work. The tool-rack shown is carried with the rig. Wrenches, chain tongs and nail bar are hung on the pipe across the top. Smaller tools, electric lantern and grease guns are kept on two trays suitable for these articles.



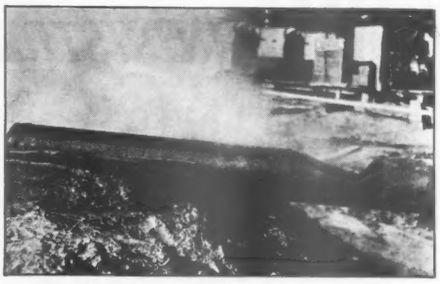
Salt Water Syphon

In order to control the salt water level in gun barrels in such a way that this may be accomplished at a point which is down grade from the tank batteries, syphons have been placed at a point on the drain lines where water flows out on that part of the lease used for disposal purposes. Syphons of jointed construction drain into wooden troughs; the level of water in the tanks can be controlled by moving the ends of the jointed syphon backward and forward in the troughs.



Air Removal Head

An air head designed and built by pump station employes in East Texas facilitates the removal of air from oil lines connecting with storage tanks and pumps. When excess air gets into the gathering lines, one pump is shut down, bringing the pressure condition in the system from that of slight vacuum to that of low pressure. The valve at the right is then cracked; air is removed until the oil level comes into the head, as shown by the gauge glass in the illustration.



Vent on Exhaust Line

By draining condensate from both slush pump and rig exhaust steam lines to the boiler feed supply pond, a considerable supply of water is reclaimed. If allowed to exhaust normally through the end of the exhaust line, the intermittent bursts of higher pressure steam spray the condensate. A drilling company, operating in the Schuler field, has found a simple cure by cutting a section from the upper portion of the exhaust line a few feet back from the end. The exhaust steam reaching this aperture, vents much of its force at this point; as a result, condensate flows instead of being blown.

Two Wells Pumped on Same Derrick Floor

In the Signal Hill field of California, one company has several locations at which two wells are pumped on the same derrick floor. In each case the wells were drilled with the same derrick by merely shifting the crown blocks. The wells shown are pumped with the same gas engine and are counterbalanced against one another. One produces from the upper portion of the Brown zone while the other produces from the lower portion. A water well is also pumped from one of the walking beams at this twin well location.

Progress in METALS

By W. L. NELSON

New Steels—Graphitic

The two factors that contribute most to the success of cast iron are its cheapness and the easy machining properties that are contributed by the presence of graphitic carbon. Now, a new type of steel is being developed by the Steel and Tube Division of the Timken Roller Bearing Co., which also takes advantage of the beneficial effect of graphitic carbon. The two most successful steels are named Graph-Sil and Graph-Mo.

These steels are classed as very high carbon steels (about 1.5 per cent carbon) but about a third of the carbon is in the form of graphite. The remaining or combined carbon contributes great hardness and strength but the machining properties are still satisfactory because of the graphitic carbon which to some extent allows the machining tool to take hold in the pockets of graphite. The graphite also simplifies lubrication to some extent and has led to the use of these steels in applications in which this quality is important. The combined carbon permits the steels to be heat treated in the regular manner to obtain a wide range of physical properties. The standard analysis of Graph-Mo is as follows:

	Pct.		Pct.
Carbon (avg.)	1.5	Manganese (max.)	0.4
Phosphorus (max.)	0.025	Sulfur (max.)	0.025
Silicon (avg.)	0.8	Molybdenum (avg.)	0.25

In short, these steels partake of the strength, toughness and forgeability of steels, and of the machining and wear properties of cast iron.

Such steels have found application for hot working dies, cold metal forming dies, lathe ways, and certain forming tools. It can be furnished as seamless tubes and is being tried as pipe-still tubes in the refining branch of the oil industry. In some services it maintains its hardness and impact strength at 900° F.

Moisture Important in Pipe Line Corrosion

Abstract of "Relation of Soil Properties to Corrosion of Buried Steels," by Walter F. Rogers, and published in Ind. Eng. Chem. 30, 1181, October, 1938.

Soils were studied in the laboratory and also by field examination for the relation of rate-of-corrosion to soil pH, soil electrical resistivity, and soil volume-water content. From these studies the author concludes:

"1. The controlling factor in soil corrosion of buried steel is the effect of variations in the soil water-air proportions. Laboratory variations of these factors in corrosion rates of 31.1-1 to 56.5-1.

"2. The electric resistivity of a soil exerts an influence on its corrosion rate. Variations in this factor in the laboratory for Kalmia sand over the range 12,000 to 94 ohm-cm. resulted in a variation in corrosion rate between 1.5 and 1.

"3. The pH of a soil exerts an influence on its corrosion rate. Laboratory tests show that varying the pH of Kalmia sand between 4.5 and 9.75 resulted in a variation in corrosion rate between 2.2 and 1.

"4. Comparison of soil resistivity measurements at saturation with the corresponding pipe pit depth show that there is a definite trend between resistivity and corrosion. The trend is not sufficiently accurate, however, to be used as an index of soil corrosion. It only can be said that very few corrosive soils have resistivity values greater than 1,800 ohm-cm. The majority of soils, however, possess values of resistivity less than this.

"5. Comparison of soil pH values with field corrosion rates indicate a complete lack of any correlation between these quantities. The method cannot be used as a field index of soil corrosion.

"6. The corrosion rate of a soil in the field may be determined by following its seasonal variation in water-air volumes and checking against a laboratory index test."

Metallurgical Terms

Aging and Artificial Aging

"The term originally applied to the process or some times to the effects of allowing a metal to remain at ordinary temperatures. Heat treatment at temperatures above normal for the purpose of accelerating changes of the type that might take place on aging at ordinary temperature is called 'artificial aging,' and sometimes merely 'aging.' When the changes taking place during artificial aging are due to the precipitation of some substance from solid solution the heat treatment may be called 'precipitation treatment.'" (A.P.I. Code of Metallurgical Terms of Ferrous Alloys, No. 28.)

The term is used primarily in connection with aluminum alloys such as duralumin. In this instance both the strength and ductility are materially improved by aging.

Centrifugal Castings

The application of centrifugal force during the casting of a metal, according to "Product Engineering," is a simple conception but the mechanical details of operation in conducting the process have not been perfected with ease. As molten metal is poured into a rotating mold, it is thrown outward to the inside surface of the mold and the gas and impurities of refractories or oxides float to the center of the whirling mass. In usual casting practice, the metal tends to solidify on all of the outside surfaces at about the same time, thus entrapping some of the solid impurities and even some of the gas in the form of blowholes. In centrifugal castings, the impurities accumulate in the center of the whirling mass and in the case of cast iron pipe or tubes, the impurities can be machined from the inside surface. The removal of impurities and gas obviously results in a sounder, stronger casting. Evidence of the improvement in properties is given in Tables 1 and 2, which show tests on cast iron pipe and on bronze gears.

The superior properties of centrifugal castings are particularly useful in the manufacture of oil-field equipment because of the excessive penalty for failure in this industry. In many installations, the failure of a casting may involve little more expense than the expense of replacing the damaged part itself whereas in the oil industry, the failure of a casting may involve the pulling of a long string of sucker rods, or halt the operations of a large staff of expensive operators. Centrifugal castings have already found widespread application in the oil industry as liners for oil-well pumps.

At first consideration it would seem that centrifugal castings would be expensive because of the use of special molds and swinging equipment—but there are several factors which together cause the cost of using centrifugal castings to be scarcely larger and sometimes even smaller than the cost of regular sand castings. First, in the foundry itself, much less waste of material occurs or the amount of metal that must be reworked is considerably less. Some castings need not be machined if made by the centrifugal process. Second, the soundness and dependability of the castings makes the costs of maintenance and care, less than with normal castings—and in some instances this factor is of immense value.

TABLE 1—MECHANICAL TESTS ON PIPES (CAST IRON)*

Diam. (in.)	Internal pressure test: Bursting pressure	Internal pressure test: Calculated† tensile (lb./sq. in.)	Transverse breaking test: Breaking‡ load (lb.)	Transverse breaking test: Deflection at center (in.)	Transverse breaking test: Modulus of rupture (lb.)
Centrifugal Cast					
6	2,800	28,500	31,400	1.13	45,600
8	2,500	29,800	50,400	0.80	41,000
10	2,250	30,400	77,300	0.82	41,400
12	2,000	30,200	103,000	0.64	34,050
Sand Cast					
6	2,050	15,600	21,000	0.97	27,200
8	2,200	19,850	33,600	0.62	21,600
10	2,050	21,400	76,100	0.64	26,600
12	1,550	18,000	100,800	0.55	25,600

*Fox and Wilson, Stanton-Lavand Foundry Trade Journal, January 21, 1926.
†Sand cast pipe was approximately 20 per cent thicker than centrifugal pipe.
‡Pipes 12 feet long, load applied at two points, 4 feet apart at equal distances from support points 10 feet apart.

TABLE 2—INFLUENCE OF SIZE AND PROCESS ON BRONZE GEARS*

	Method of making: Sand cast	Ring chill	3-Sided chill	Cent. cast
Diam., 12 in.; face, 2 in.; bore, 8 in.				
Yield point	16,000	19,000	26,000	37,000
Tensile strength	30,000	33,000	38,000	44,000
Elongation, per cent	7	4	6	7
Hardness (10 mm. ball 1,000 kg. load)	75	85	100	110
Izod (ft. lb.)	34	23	17	25
Compressibility, permanent set at 50,000 pounds per square inch	6.8	4.5	2.9	2.6
Density	8.4	8.5	8.65	8.75
Diam., 18 in.; face, 3½ in.; bore, 12 in.				
Yield point	14,000	15,000	23,000	31,000
Tensile strength	26,000	30,000	34,000	41,000
Elongation, per cent	7	5	7	9
Hardness (10 mm. ball 1,000 kg. load)	63	78	85	98
Izod (ft. lb.)	38	29	24	34
Compressibility, permanent set at 50,000 pounds per square inch	8.2	8.3	4.2	3.5
Density	8.2	8.3	8.45	8.6

*Francis W. Rowe, Metal Progress, June, 1933.

California Line Saved From Abandonment by Insertion Job

By W. E. ARCHER

In southern California, across the busy metropolitan area of West Los Angeles, there has just been completed a very unusual piece of pipe line reconditioning and replacement. The job comprised about a 20-mile section of the 10-inch line of the old Pan American Petroleum Corp., laid in 1924 from Elk Hills to what is the present Richfield refinery at Watson, some 12 miles south of Los Angeles, the Richfield Oil Corp., present owner, having taken over the old Pan American corporation in about 1931. The repaired section of the line herein described extends from a point near Victoria Avenue and Avalon Boulevard, in South Los Angeles, to Laurel and Sunset Boulevard, in Hollywood.

The project was unusual from two or three angles, the one principal point being that by its successful completion, there was eliminated the necessity of abandoning and rerouting the line. A feature which made the job somewhat unusual was that for more than half the distance, the work comprised inserting 8-inch pipe within the old original 10-inch line. Lines in the past have been inserted in this manner in different parts of the country, of course, but it is believed that this is the most extensive piece of this type of work ever attempted.

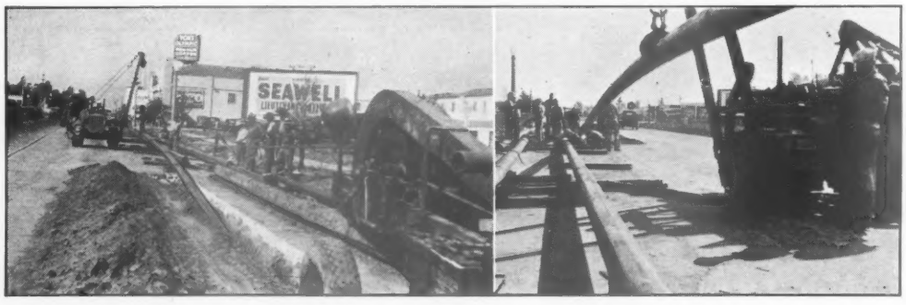
Conditions Encountered

The reason for the necessity of the insertion in this case was that much of it being beneath heavy concrete highway and street pavement, together with being in a heavily congested area presenting a bad traffic problem to handle, made it practically impossible to excavate, remove and recondition or replace the line. When the original line was installed, it was through what was then comparatively open country with little encountered in the way of improvements, streets and highways; whereas, since that time the area has grown until it is now a busy section of Los Angeles. In recent months several leaks developed in the old line, from which the oil would, in places, come through to the surface. Consequently, it was decided to insert a new 8-inch line within the old line in all sections over which there was heavy concrete pavement; and in areas where only dirt or light asphalt covered the line, it was decided to take the line up, recondition and relay it.

Due to the unusual features of the job, estimates by the contractors who bid on the job were necessarily difficult to make, and much blind calculating was necessary. Old surveys of the original line were not as complete as they might have been, and changes in streets, new streets, and curves, made for some difficulty in locating the line in some places. This trouble, however, was minimized to a great extent by the use of the radio finding instrument, which also eliminated much useless excavating.

Insertion Operation

Approximately 11 miles of the 20-mile job were inserted. Pictures of the insertion operations are shown herewith. In lining up the pipe for the "pulling-pushing in" or insertion operation, usually about four of the 40-foot joints were welded into a string, tied to the line and pulled at one operation into the old line. In this connection it might be stated that the term "pushing" might perhaps be as correct as "pulling," in this insertion operation, for while the machine pulled the line, it was, in one manner of speaking, pushed through the old line. The length of the strings of pipe so inserted depended, of course, upon conditions. In the actual pulling (or "pushing") operation, the power used is provided by an ordinary well casing pulling machine equipped with a heavy cable, having a pulling capacity of 25 tons on a straight pull, with double that capacity where blocks were used. A tractor with clamp about the pipe moved along steadying the pipe and holding it in line as it was drawn into the old line. A ditch about 50 feet in length usually provided the proper angle for easy pulling.



(Left) Tractor holds and steadies pipe as it is drawn into old line by heavy cable through other end. (Right) During welding, pipe held in position by tractor

The longest section pulled on the job was 6,620 feet. The shortest was 50 feet. Little difficulty was experienced in pulling the sections. Several long radius bends in the old line requiring the negotiating of curves of from 8 to 10 degrees were made without serious difficulty. In some cases where a curve was too sharp to be made from one direction, a section would be brought together by pulling to the curve from two directions. A smooth, rounded "bull-plug" on the end of the pipe aided in allowing the end of the pipe to move along inside the old pipe. Grease was applied freely to the pipe at the point of entry to the old line which eliminated friction and aided the movement of the pipe, especially at bends. The old line, having many early type handmade angles, made for some trouble, of course, although no serious delays were experienced from this cause.

The remaining 9 or 10 miles of the line was removed, reconditioned, and relaid, as stated before. This consisted first of sand blasting and applying a primer coat; spot welding all pits of more than one-eighth inch in depth; repriming and giving the pipe further cloth and paper wrapping, and tar treatment. Predominantly, these sections were reconditioned in this manner. Where many pits were found close together, a patch, or "half-sole," was welded outside the pipe over the area. In fact much of this type of repairing was done, the patches ranging from a foot or so to several feet in length. In cases where a whole joint of the pipe was badly pitted, new pipe was used. Before replacing, the line was given a 700-pound per square inch water test.

As a preservative measure for the 8-inch inserted section of the line, hot road oil mixed with about 75 per cent asphalt, was pumped into the old line following the completion of the insertion job, thus forming protection around the new inserted line.

Reconditioned Line

By this reconditioning job, the operating capacity of the line was reduced only that of the difference between a 10-inch and an 8-inch line. The line will still have sufficient capacity for supplying the Watson plant, and will continue to operate with the original five pumping stations located as follows: Lake station, between Taft and Bakersfield; Wheeler Ridge station, on toward the Tehachapi Mountains; Grapevine station, at the beginning of the Tehachapi Mountains; Tejon station, farther over the "Ridge"; and Newhall station, on the south side of the "Ridge," which last-named station is not being used at this time, the Tejon station, aided by gravity, being sufficient to force the oil the remaining distance to its destination at the Watson refinery.

Lindgrin & Swinerton, pipe line contractors, of Los Angeles and San Francisco, were the successful bidders on the project. Barney Dixon was general superintendent on the job for the contractors, assisted by Ian Weddell, engineer. The Richfield Oil Corp. had on the project as its representatives, Arthur Gore, superintendent of the pipe line department; its field engineer, L. A. Wilson; and assistant engineer, Jack Adams. N. J. Martin was chief inspector for the owners of the line. This operation has attracted considerable attention.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Detecting and Measuring Quantity of Lead in Atmosphere

What is the chemical method for measuring the lead content of the air? What is the chief source of lead in the air?—E. N. G.

Lead is seldom found in atmosphere. The question is important when manufacturing conditions are such that lead fumes and dusts are formed, as in the smelting of ores, lead-burning, spray-painting or the manufacture of compounds and materials containing lead. The detection and determination of lead in the atmosphere has been studied by many chemists, so reliable methods are available in the standard texts. The two methods following are recommended by the Air Hygiene Foundation of America.

A definite volume of air, usually between 30 and 45 cubic feet will be sufficient, is passed through 75 to 100 cc. distilled water, acidified with nitric acid, contained in an absorbing tower, at the rate of 1 foot per minute.

The solution is washed from the tower into a 250 cc. beaker with water containing nitric acid, then evaporated slowly to dryness. Evaporate twice to dryness after adding 1 cc. HCl. Dissolve by heating in 25 cc. H_2O and 5 drops HNO_3. Just neutralize with NaOH solution (Phenolpththalein indicator). Add 5 to 6 drops CH_3COOH and warm. Add 10 drops K_2CrO_4 solution; set aside 2 to 12 hours after boiling 5 minutes. Filter, wash well with warm H_2O. Dissolve precipitate through filter into an Erlenmeyer flask with about 2 cc. HCl, wash with warm H_2O. Add 2 cc. KI solution to filtrate with 2-3 drops starch indicator. Titrate with *N* $Na_2S_2O_3$ until blue color disappears. 1 cc. of 0.005 *N* $Na_2S_2O_3$ = 0.345 mg. Pb.

Example:

(*a*) Air sample 30 cu. ft.

(*b*) $Na_2S_2O_3$ of *N* 0.005 used 2.305 cc.

(*c*) Total mg. Pb = b × 345.

(*d*) Then mg. Pb/cu. ft. $= \frac{c}{a}$ or 0.0265.

Very small quantities of lead in air may be determined by the colorimetric dithizone method. Lead is extracted from a solution of controlled alkalinity with a chloroform solution of dithizone (diphenyl thiocarbazone). Dithizone forms colored metalo-organic compounds with several metal ions. By proper control of alkalinity, and cyanide concentration, interfering ions are eliminanted and the cherry-red lead compound is segregated in solution, color depth depending upon the quantity of lead present. The lead in the sample for analysis should be less than 0.1 mg.

Reagents—HNO_3 conc. Solution A: To 15 cc. of 10 per cent KCN solution (which is 10 gm. KCN in 95 cc. H_2O), add 20 cc. of 5 per cent ammon. citrate solution, a 5 per cent solution in H_2O, and make just alkaline with NH_4OH. Add 53 conc. NH_4OH and 450 cc. H_2O. Solution B: To 500 cc. H_2O add 5 cc. of 10 per cent KCN solution and 15 cc. conc. NH_4OH. Chloroform dithizone solution: Dissolve 5 mg. dithizone in 200 cc. chloroform. Lead nitrate standard solution: Dissolve 1.598 gm. lead nitrate C.P. in H_2O plus 1 cc. HNO_3, dilute to 1,000 cc. To 10 cc. of this solution. 1 mg. Pb per cc., add 990 cc. H_2O to make a solution containing 0.01 mg. Pb per cc.

Procedure—To the sample add exactly 10 cc. HNO_3 and boil until the volume is less than 90 cc., or the solution has boiled several minutes. Cool, wash sample into 100 cc. volumetric flask, dilute with H_2O to the mark. (Note: Exactly 10 cc. HNO_3 are present). Thoroughly mix, remove 5 cc. to a separatory funnel containing 15 cc. Solution A. Add dithizone solution from a burette 0.3 cc. at a time, shaking each time, until cherry-red color in the bottom layer becomes tinged with purple. Add chloroform from another burette until the total dithizone solution plus chloroform equals 10 cc. Shake 10 seconds. Run bottom layer into second separatory funnel, in which 20 cc. Solution B have been placed. Shake well. Run chloroform layer into color comparison tube, stopper with cork. Match unknown air sample with standards.

Standards—Prepare color standards containing 0.005, 0.010, 0.015, 0.025 and 0.04 mg. Pb from Pb $(NO_3)_2$ solution. For 0.005 mg. standard use 5 cc. solution, add 40 cc. H_2O and 5 cc. HNO_3. Treat 5 cc. of this thoroughly mixed solution in the same way as the sample above. For other standards use proportionately larger portions of lead solution but always make up to 50 cc. including 5 cc. HNO_3. Example: The 0.015 mg. standard includes 15 cc. lead solution, 30 cc. water and 5 cc. HNO_3.

Calculations:

Total air 30 cu. ft. Color matches 0.008 mg. Estimated total Pb = 0.008 × 20, or 0.16 mg. mg.

$$\text{Pb/cu. ft} = \frac{0.16}{30} = 0.053.$$

mg. Pb/cu. ft. = 0.053 × 35 = 1.9.

Caution—use Pyrex glass and all reagent lead-free. Run a blank.

Reference: Determination of Lead in Air, Air Hygiene Foundation of America, P. E. S. Bull, No. 2, Part 6.

No Substitute For Helium Found

Do you have any news confirming the announcement that a German chemist has discovered a gas with properties similar to helium, suitable for aircraft use?—H. W. A.

Some weeks ago a report appeared in the press of the discovery in Germany of a very light gas, suitable to be used as a substitute for helium in aircraft. This appears on investigation to have been an error resulting from the misinterpretation of a statement made before a scientific meeting in Germany.

There is but little foundation to support a thought that a gaseous element may some day be discovered which will be noncombustible and weigh less than either helium or hydrogen.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Cyclohexylamine

(Hexahydroaniline)

Use—Solvent emulsifying agent, insecticide preparations.

Form—Colorless liquid.

Formula—$C_6H_{11}NH_2$.

Molecular weight—99.

Specific gravity—0.8678.

Boiling Point, °F.—273.

LIMITATIONS

Specific gravity	0.865 (approx.)
Color	colorless
Distillation total at °F.	277
Purity, per cent	97

Sulfur Content of Gas for Safety and Domestic Conditions

On Page 47 of the November 3 issue of The Oil and Gas Journal concerning permissible percentage of hydrogen sulfide in natural gas for safe working conditions, grams is used for grains. Most regulatory bodies limit total sulfur to 20 to 30 grains per 100 cubic feet, with but a trace as hydrogen sulfide.—R. L. R.

The original question was confined to natural gas, which in the absence of specific requirements relating to hydrogen sulfide, would have to comply with the local laws covering gas for domestic use.

The Wisconsin Commission rule regarding purity of the gas is as follows:

"In no case shall the gas contain more than 20 grains of sulfur per 100 cubic feet, nor more than five grains of ammonia per 100 cubic feet. Not more than a trace of hydrogen sulfide shall be present at any time. Each utility shall keep a record of all purity tests which it makes."

In the U. S. Department of Commerce Circular No. 405, "Standards for Gas Service," Page 134, the following statement is made:

"*Total sulfur.*—All manufactured gas or mixtures of natural and manufactured gas distributed in this state shall not contain more than 20 grains of total sulfur in each 100 cubic feet. It is provided, however, that not more than 30 grains of sulfur in 100 cubic feet may be permitted if the utility shall show cause for such an exception in advance or immediately upon the discovery of exceptional conditions which warrant it."

It is advisable that gas for domestic use should be free from hydrogen sulfide, because of its toxic properties, but manufacturing conditions are seldom efficient enough to remove all of this impurity, so traces are frequently encountered. Hydrogen sulfide is known as a dangerous poison to human beings so little as 0.005 per cent when breathed will cause irritation and inflammation and 0.06 per cent is considered unsafe. In general, cities stipulate the maximum permissible quantity of hydrogen sulfide that may be contained in gas sold for domestic use at 0.05 per cent by volume or 30 grains per 100 cubic feet of gas.

There are more varieties of sulfur compounds produced when making artificial gas than are found in natural gas. It is because of this that the sulfur specification is for total sulfur instead of some definite form such as hydrogen sulfide. When the gas is burned most of the sulfur is changed to the oxide which often escapes to cause tarnishing of the household silverware

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Effect of Barometric Pressure on Wells

Are there any published data covering investigations of level of water in wells that indicate the effect of atmospheric pressure, if any?—G. M. T.

At the recent meeting of the Geologic Society of America held in New York City there was an impressive exhibit in the form of a series of graphs showing the effect of barometric pressure on ground water levels.

When the great hurricane along the eastern coast occurred September 21 it caused the barometer to abruptly sink to record low. The water level in three widely separated wells simultaneously came upward to record highs.

These wells were located at Forest Hills, depth 438 feet; at Valley Stream, depth 911 feet, and at Rockaway Park, depth 840 feet.

When the hurricane had receded the barometer quickly rose to normal reading and the water level in the wells responded accordingly.

It was also observed that when the hurricane arrived the water level in large bodies of water arose en masse and put light plants out of commission and caused the flooding of power houses.

Another interesting chart showed the effect on ground water levels due to the cutting of a large field of alfalfa at Es Calante desert, Utah. When the alfalfa was cut the water level rose promptly. (This may have been due to the fact that alfalfa requires a large volume of water for nourishment and when cut the demand upon the subsurface water was released so the water level in the wells arose accordingly.)

Many instances have been reported that seem to indicate there is some connection between atmospheric pressure and the producing rate of some oil wells. Tide movement also has some effect upon production in some instances.

Producing Low-Pressure Sand Wells

In producing oil from the Bartlesville sand in the stripper belt of southeastern Kansas has there ever been any technical work done to prove whether or not it is the best practice to keep the sand covered with oil or if it is harmful to place the perforated pipe at the bottom of the sand?—J. P. C.

Some operators handling Bartlesville sand wells maintain they get better results when the oil is allowed to accumulate in a hole drilled below the bottom of the sand. As the formation immediately under the Bartlesville sand does not have any water in it, it is safe practice to drill the hole below the sand and permit the oil to run into it. The working barrel is then set low and no oil accumulates opposite the sand to retard in any way the production.

As to direct comparisons of this method with the method of allowing the oil to fill up in the hole opposite the sand there are no data because it is impossible to operate the same well under both conditions. Offset wells might have other conditions which would effect the rate of production so it would be very difficult to find an ideal test condition.

If the oil accumulates opposite the sand it will have some slight effect upon free flow from the sand. On the other hand if the oil runs down the side of the hole over the sand it has a tendency to congeal and may cake on the face of the sand and retard production. As the oil runs into the well only due to the slight difference in head between the top and bottom of the hole a pressure gradient of very small value is set up. With the bottom of the hole full of oil it is reasonable to assume that flow from the sand stops when the hole is filled to a point opposite the place where the oil would discharge from the sand and would not start to flow again until the oil in the hole had been removed. However, it may be possible that some oil back in the sand from the face of the hole will accumulate while the flow at the sand face is stopped and when the face is cleared of oil this accumulated oil would be released.

As the wells are very small producers under any method of production it really resolves itself into a matter of operators preference and a little experimenting with one well first without the hole below the sand and later with the sump hole might give some interesting data.

Difference in Volume Between Oil in Reservoir and in Tanks.

Please give me reference of the relationship between surface oil and reservoir crude specifically on such terms as shrinkage factor, saturation pressure and flash and differential liberation.—R. C.

In reply to your inquiry about shrinkage factors and the relation between surface oil and reservoir crude you are referred to the following papers:

Application of Phase Equilibrium Data to the Estimate of Oil and Gas Reserves by B. H. Sage and W. N. Lacey before A. P. I. meeting held in June, 1937.

Application of Vaporization Equilibrium Constants to Production Engineering Problems by Donald L. Katz in A. I. M. E. Division of Petroleum Transactions—1938 p. 159.

At the end of Mr. Katz' article there are numerous references to other papers and articles upon this same general subject.

Welding Tool Joints to Drill Pipe

Is it true that some drilling contractors find it advantageous to use their new drill pipe a while before having the tool joints welded? If so, why?—H. W. B.

The above question was recently submitted to the editor of this department and was answered in part as follows:

"It is not customary to weld tool joints on new pipe."

That answer was in error. During the past 10 years thousands of tool joints have been welded onto new drill pipe. This practice has been justified by increased performance of the drill pipe due to elimination of failures at last engaged thread.

The Oil and Gas Journal wishes to correct the statement made in the previous issue.

Rule for Changing Liners and Rings in Compressor

After an engine has been in service for several years there is bound to be wear in the cylinders. Under what conditions would new liners and pistons be advisable? I am wondering if there is not some "rule of thumb" stating the conditions under which the engine should be equipped with new liners and pistons. The specific problem in mind concerns an internal combustion natural gas engine and compressor as used in natural gas pipe line compressor stations.—W. L. T.

In answering the question you ask, we can only say that when the engine definitely loses compression and is not developing the usual horsepower or handling the regular volume of gas it is time to check the wear in the cylinders. Otherwise the wear is being compensated for by the piston rings and the engine should be working efficiently.

As a matter of fact a wear of one-thousandth of an inch per inch of cylinder diameter is not unusual. If there is a "slap" in the compression end of the natural gas engine it would probably also be noted that the gauge pressure had fallen off and the compressor was not handling its usual amount of gas. As the gas is metered on leaving the compressor and a certain volume has to be delivered into the line each day it is good practice to let things alone until this volume shows some marked change.

Flowing Wells in East Texas Field

Are there many wells on the main structure in the East Texas field on the pump? Has the weekly shutdown and lease proration raised the bottom-hole pressure thereby postponing the time when wells will go on the pump?—R. H. G.

Replying to your letter asking about East Texas field.

There are more than 27,000 wells in the East Texas field and of this number more than 20,000 still flow naturally.

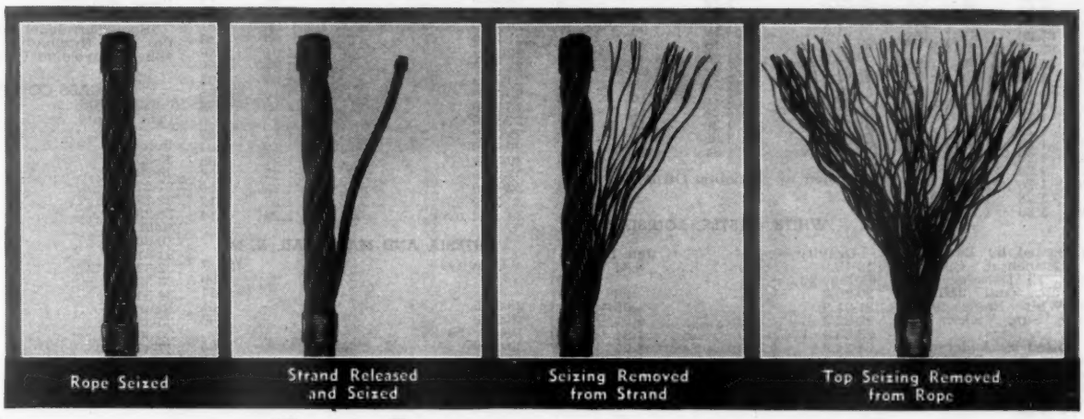
The weekly shutdown has tended to retard drop in bottom-hole pressure and this will permit the wells to flow for a longer period than they would have if pressure had been allowed to decline.

Explanation of the Term "Jetting"

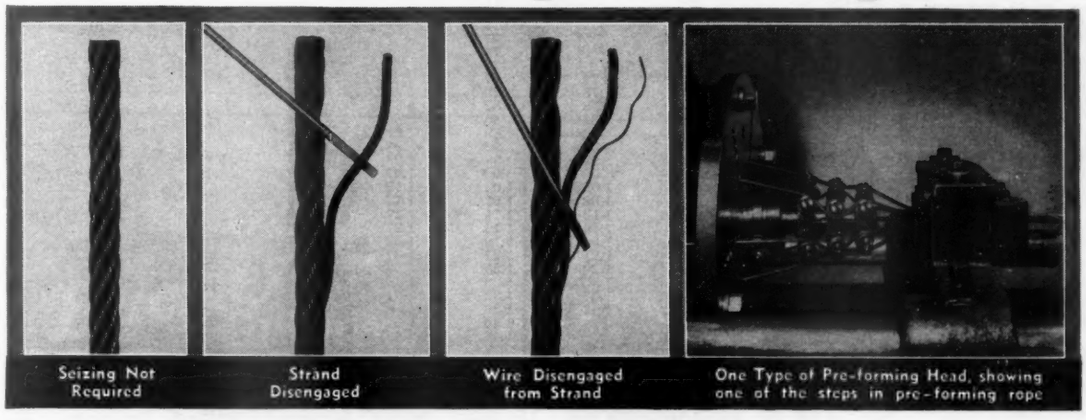
Please forward us information as to what production system is meant by the term "jetting" as used in Southwest Texas field report on Page 80 of December 22 issue of The Oil and Gas Journal.—McM. M. C.

A simple definition of "jetting," is an artificial means of lifting oil from a producing well by means of jetting gas into the hole. This method is generally used when the gas pressure of a well is not sufficient to flow the oil to the surface. This procedure is usually left up to the operator. There is no special equipment needed for such a method as the gas may be injected through the casing or tubing, and is sometimes used by running a smaller size of casing equipped with a series of flow valves inside of the tubing, and the oil carried to the surface by stages. This latter method is referred to as "stage lifting".

The DIFFERENCE ....



between "*ordinary*" wire rope . . .


Seizing Not Required
Strand Disengaged
Wire Disengaged from Strand
One Type of Pre-forming Head, showing one of the steps in pre-forming rope

and "UNION-*formed*"

The photographs suggest the basic difference between ordinary and pre-formed rope. In ordinary rope every wire is under pronounced internal stresses. But in pre-formed rope the wires have been given the exact helical shape they take in the finished rope—thus are stress-free!

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ALL ROPES which must endure severe bending

May we place you on our mailing list for our informative bulletin, "ROPE DOPE"?

Crude Oil Price Changes During 1938

OKLAHOMA AND KANSAS

Gravity—	Jan. 1 Schedule No. 1	Jan. 1 Schedule No. 2	Oct. 12 Schedule No. 1	Oct. 11 Schedule No. 2
20-20.9	...	...	.60	.70
21-21.9	...	...	.63	.72
22-22.9	...	...	.66	.74
23-23.9	...	...	.69	.76
24-24.9	...	...	.72	.78
Below 25	...	$.98	...	...
25-25.9	...	1.00	.75	.80
26-26.9	...	1.02	.78	.82
27-27.9	...	1.04	.81	.84
28-28.9	...	1.06	.84	.86
Below 29	$1.06	...	...	...
29-29.9	1.08	1.08	.87	.88
30-30.9	1.10	1.10	.90	.90
31-31.9	1.12	1.12	.92	.92
32-32.9	1.14	1.14	.94	.94
33-33.9	1.16	1.16	.96	.96
34-34.9	1.18	1.18	.98	.98
35-35.9	1.20	1.20	1.00	1.00
36-36.9	1.22	1.22	1.02	1.02
37-37.9	1.24	1.24	1.04	1.04
38-38.9	1.26	1.26	1.06	1.06
39-39.9	1.28	1.28	1.08	1.08
40 and over	1.30	1.30	1.10	1.10

Schedule No. 1 posted by Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.

Schedule No. 2 posted by Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

October 12—Magnolia Petroleum Co., effective October 12, 1938.

October 11—Standard Oil Co. of Indiana, effective October 11, 1938, below 29 degrees 86 cents, with 2-cent spread to 40 and over at $1.10. Same company on October 17 revised the schedule to start at below 21 degrees at 70 cents with 2-cent spread to 40 and over at $1.10. Sinclair Prairie Oil Marketing Co. schedule started at below 25 degrees, 60 cents; 25-25.9, 80 cents with 2-cent differential up to $1.10 for 40 degrees and over, effective October 11, but was revised on October 14, starting at 21 gravity, 60 cents, with 3-cent spread to 30-30.9 degrees at 90 cents, then a 2-cent spread to 40 degrees and over at $1.10. Gulf Oil Corp. schedule starts at below 25 degrees, 78 cents, with 2-cent differential up to $1.10 for 40 degrees and over, effective October 13. Shell Petroleum Corp. schedule same as that of Gulf, effective October 13. The Texas Co. schedule starts at 28-28.9 degrees 86 cents, with top of $1.10 for 40 degrees and over. Pure Oil Co. same as Standard of Indiana's October 11 schedule, effective October 14.

ALTUS AND TIPTON, OKLAHOMA

	Jan. 1
Altus and Tipton	$1.20

On October 13 Altus and Tipton were given the North Texas gravity prices.

Posted by Gulf Oil Co.

CHOCTAW, DARROW, ROANOKE AND NORTH CROWLEY, LA.

Gravity—	Jan. 1	Oct. 5
Below 21	$.90	$.74
21-21.9	.93	.77
22-22.9	.96	.80
23-23.9	.99	.83
24-24.9	1.02	.86
25-25.9	1.05	.89
26-26.9	1.08	.92
27-27.9	1.10	.94
28-28.9	1.12	.96
29-29.9	1.14	.98
30-30.9	1.16	1.00
31-31.9	1.18	1.02
32-32.9	1.20	1.04
33-33.9	1.22	1.06
34-34.9	1.24	1.08
35-35.9	1.26	1.10
36-36.9	1.28	1.12
37-37.9	1.30	1.14
38-38.9	1.32	1.16
39-39.9	1.34	1.18
40 and over	1.36	1.20

Posted by Standard Oil Co. of Louisiana.

NORTH LOUISIANA AND ARKANSAS

Gravity—	Jan. 1	Oct. 5
Below 25	$.90	$.73
25-25.9	.92	.75
26-26.9	.94	.77
27-27.9	.96	.79
28-28.9	.98	.81
29-29.9	1.00	.83
30-30.9	1.02	.85
31-31.9	1.04	.87
32-32.9	1.06	.89
33-33.9	1.08	.91
34-34.9	1.10	.93
35-35.9	1.12	.95
36-36.9	1.14	.97
37-37.9	1.16	.99
38-38.9	1.18	1.01
39-39.9	1.20	1.03
40 and over	1.22	1.05

EVANGELINE, LA.

Gravity—	Jan. 1	Sept. 15	Oct. 11
Below 20	$.92	...	...
20-20.9	.94	...	...
21-21.9	.96	...	...
22-22.9	.98	...	...
23-23.9	1.00	...	...
24-24.9	1.02	...	...
25-25.9	1.04	...	...
26-26.9	1.06	...	...
27-27.9	1.08	...	...
28-28.9	1.10	...	...
29-29.9	1.12	...	...
30-30.9	1.14	...	...
31-31.9	1.16	1.00	.87
32-32.9	1.18	1.02	.89
33-33.9	1.20	1.04	.91
34-34.9	1.22	1.06	.93
35-35.9	1.24	1.08	.95
36-36.9	1.26	1.10	.97
37-37.9	1.28	1.12	.99
38-38.9	1.30	1.14	1.01
39-39.9	1.32	1.16	1.03
40 and over	1.34	1.18	1.05

Posted by Stanolind Oil & Gas Co.

WHITE CASTLE, LOUISIANA

Gravity—	Jan. 1	Oct. 11
19-19.9	$.94	...
Below 20	...	$.75
20-20.9	.96	.81
21-21.9	.98	.83
22-22.9	1.01	.86
23-23.9	1.04	.89
24-24.9	1.07	.92
25-25.9	1.10	.95
26-26.9	1.13	.98
27-27.9	1.15	1.00
28-28.9	1.17	1.02
29-29.9	1.19	1.04
30-30.9	1.21	1.06
31-31.9	1.23	1.08
32-32.9	1.25	1.10
33-33.9	1.27	1.12
34-34.9	1.29	1.14

IOWA DISTRICT, LA.

Gravity—	Jan. 1	Oct. 11
Below 18	$.90	$.75
18-18.9	.92	.77
19-19.9	.94	.79
20-20.9	.96	.81
21-21.9	.98	.83
22-22.9	1.01	.86
23-23.9	1.04	.89
24-24.9	1.07	.92
25-25.9	1.10	.95
26-26.9	1.13	.98
27-27.9	1.15	1.00
28-28.9	1.17	1.02
29-29.9	1.19	1.04
30-30.9	1.21	1.06
31-31.9	1.23	1.08
32-32.9	1.25	1.10
33-33.9	1.27	1.12
34 and over	1.29	1.14

ARTESIA AND MALJAMAR, N. M.

Gravity—	Jan. 1
...	$.90
	Oct. 11
28-28.9	$.61
29-29.9	.63
Below 30	...
30-30.9	.65
31-31.9	.67
32-32.9	.69
33-33.9	.71
34-34.9	.73
Below 35	...
35-35.9	.75
36-36.9	.77
37-37.9	.79
38-38.9	.81
39-39.9	.83
40 and over	.85

WEST TEXAS

	Jan. 1	Oct. 11
Pecos County*	$.91	$.78
Pecos shallow†	.81	.65

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

CASS COUNTY, TEXAS

	Jan. 1
Cass County	$1.25
	Oct. 11
Below 25	$.73
25-25.9	.75
26-26.9	.77
27-27.9	.79
28-28.9	.81
29-29.9	.83
Below 30	...
30-30.9	.85
31-31.9	.87
32-32.9	.89
33-33.9	.91
34-34.9	.93
Below 35	...
35-35.9	.95
36-36.9	.97
37-37.9	.99
38-38.9	1.01
39-39.9	1.03
40 and over	1.05

CALIFORNIA CRUDE OIL PRICE CHANGES IN 1938

Gravity—	Richfield Jan. 1	Santa Fe Springs Jan. 1	Montebello Jan. 1	Athens, Rosecrans Jan. 1	Mountain View Jan. 1	Elwood Terrace Jan. 1	Beiridge‡ Jan. 1	El Segundo Jan. 1	Kettleman Hills Jan. 1
14-14.9	$.76	...	$.77	...	...	...	$.70	$.80	...
15-15.9	.76	...	.77	...	...	...	.70	.80	...
16-16.9	.76	...	.77	...	...	...	.70	.80	...
17-17.9	.76	...	.77	...	...	...	.70	.80	...
18-18.9	.76	...	.77	...	...	...	.70	.80	...
19-19.9	.76	...	.77	...	.$.70	...	.74	.82	...
20-20.9	.78	...	.77	...	.70	...	.78	.85	...
21-21.9	.80	$.78	.77	...	.73	...	.82	.88	...
22-22.9	.84	.78	.79	...	.77	...	.86	.92	...
23-23.9	.88	.78	.82	$.84	.80	...	.90	.95	...
24-24.9	.91	.82	.85	.88	.84	...	.94	.99	...
25-25.9	.95	.86	.89	.93	.88	...	.98	1.03	...
26-26.9	.98	.90	.92	.98	.91	...	1.02	1.06	...
27-27.9	1.02	.95	.96	1.03	.95	F.O.B.	1.06	1.10	...
28-28.9	1.06	.99	.99	1.07	.99	ship	1.10	1.14	...
29-29.9	1.09	1.03	1.03	1.12	1.02	...	1.14	1.17	...
30-30.9	...	1.08	1.07	1.17	1.06	...	1.18	1.21	...
31-31.9	...	1.12	1.11	1.22	1.09	...	1.20	...	...
32-32.9	...	1.16	1.14	1.27	1.13	...	1.22	...	...
33-33.9	...	1.20	1.18	1.32	1.17	$1.28	1.24	...	$1.19
34-34.9	...	1.25	1.22	1.37	1.20	1.32	1.26	...	1.23
35-35.9	...	1.29	1.25	1.42	...	1.35	1.28	...	1.27
36-36.9	...	1.33	1.29	1.46	...	1.39	1.30	...	1.31
37-37.9	...	1.37	1.32	1.51	...	1.43	1.32	...	1.35
38-38.9	...	1.42	1.36	1.56	...	...	...	...	1.39
39-39.9	...	...	1.40	1.61	...	...	...	...	1.43
40-40.9	...	...	1.43	1.66	...	...	...	...	...

Gravity—	West Coyote Hills Jan. 1	Buena Vista Hills, Midway-Sunset, Lakeview area, Elk Hills Jan. 1	Lost Hills† Jan. 1	Alamitos Heights Jan. 1	Whittier, La Habra Jan. 1	Rincon* Jan. 1	Dominguez Jan. 1	Wheeler Ridge Jan. 1	Coalinga Jan. 1
14-14.9	$.78	$.70	$.70	$.74	$.76	...	...	...	$.70
15-15.9	.78	.70	.70	.74	.76	...	...	...	.70
16-16.9	.78	.70	.70	.74	.76	...	...	...	.70
17-17.9	.78	.70	.70	.74	.76	...	...	...	.70
18-18.9	.78	.70	.70	.74	.76	...	...	...	.70
19-19.9	.78	.74	.74	.74	.78	...	...	$.70	.71
20-20.9	.80	.78	.78	.74	.82	...	...	.70	72
21-21.9	.84	.82	.82	.74	.85	...	...	.70	.74
22-22.9	.88	.87	.86	.74	.89	$.69	...	.72	.78
23-23.9	.92	.92	.90	.77	.93	.71	$.79	.76	.82
24-24.9	.96	.97	.94	.80	.96	.73	.81	.79	.86
25-25.9	1.00	1.01	.98	.82	...	.75	.83	.83	.90
26-26.9	1.03	1.06	1.02	.85	...	.77	.86	...	...
27-27.9	1.06	1.10	1.06	.88	...	.79	.88	...	...
28-28.9	1.10	1.15	1.10	.90	...	.81	.90	...	...
29-29.9	1.14	1.20	1.14	.93	...	.83	.93	...	...
30-30.9	1.17	1.25	1.18	.95	...	.85	.95	...	...
31-31.9	1.21	1.29	...	...	...	...	.97	...	...
32-32.9	1.25	1.34	...	...	...	...	1.00	...	...
33-33.9	1.28	1.38	...	...	...	...	...	...	...
34-34.9	1.32	...	...	...	...	...	...	...	...

Gravity—	Torrance Jan. 1	Seal Beach Jan. 1	Huntington Beach Jan. 1	Inglewood Jan. 1	Signal Hill Jan. 1	Santa Paula‡ Jan. 1	Orcutt‡ Jan. 1	Wilmington Jan. 1	Playa Del Rey Jan. 1
14-14.9	$.80	$.79	$.78	$.79	$.80	$.70	...	$.75	$.80
15-15.9	.80	.79	.78	.79	.80	.70	.75	.80	
16-16.9	.80	.79	.78	.79	.80	.70	$.70	.75	.80
17-17.9	.80	.79	.78	.81	.80	.71	.70	.77	.80
18-18.9	.82	.79	.78	.84	.80	.73	.72	.79	.80
19-19.9	.85	.79	.82	.87	.82	.75	.74	.82	.84
20-20.9	.88	.79	.85	.90	.85	.77	.77	.85	.88
21-21.9	.91	.79	.89	.93	.88	.79	.80	.88	.93
22-22.9	.93	.82	.92	.96	.92	.82	.83	92	.98
23-23.9	.96	.86	.96	.99	.95	.85	.86	.95	1.02
24-24.9	.99	.91	1.00	1.02	.99	.87	.88	.99	1.06
25-25.9	1.02	.95	1.03	1.05	1.03	.90	.91	1.03	1.11
26-26.9	1.05	1.00	1.07	1.09	1.06	.92	.93	1.06	1.16
27-27.9	...	1.05	1.11	1.12	1.10	.95	...	1.10	...
28-28.9	...	1.10	1.14	1.15	1.14	.97	...	1.14	...
29-29.9	...	1.15	1.18	1.18	1.17	.99	...	1.17	F.O.B.
30-30.9	...	1.19	1.22	1.21	1.21	1.01	...	1.21	pipe line
31-31.9	...	...	...	1.24	...	...	...	...	...
32-32.9	...	...	...	1.27	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	...	...

*Posted by General Petroleum Corp. of California. †Union Oil Co.'s Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Lost Hills schedule stops at $1.32 for 37 degrees and over. ‡Posted by Union Oil Co. Effective December 22, 1937, Standard Oil Co. of California posted the following price schedule in the Greeley and Canal fields: 84 cents for 27 gravity to $1.64 for 48 gravity and above. Newhall, McKittrick, Kern River, Kern Front and Round Mountain unchanged at flat price of 70 cents. Kettleman Hills, Olinda, Brea Canyon, Ventura Avenue and Playa Del Rey also unchanged.

CENTRAL AND NORTH TEXAS

Gravity:	Jan. 1	Aug. 29	Sept. 19	Oct. 11	Dec. 3
24-24.9	....	....	....	$.71	$.71
25-25.9	....	....	....	.73	.73
26-26.9	....	....	....	.75	.75
27-27.9	....	....	....	.77	.77
28-28.9	....	$.96	$.96	.79	.79
Below 29	$.96	....	....	....	....
29-29.9	.98	.98	.98	.81	.81
30-30.9	1.00	1.00	1.00	.83	.83
31-31.9	1.02	1.02	1.02	.85	.85
32-32.9	1.04	1.04	1.04	.87	.87
33-33.9	1.06	1.06	1.06	.89	.89
34-34.9	1.08	1.08	1.08	.91	.91
35-35.9	1.10	1.10	1.10	.93	.93
36-36.9	1.12	1.12	1.12	.95	.95
37-37.9	1.14	1.14	1.14	.97	.97
38-38.9	1.16	1.16	1.16	.99	.99
39-39.9	1.18	1.18	1.18	1.01	1.01
40 and over	1.20	....	1.20	....	1.03
40-40.9	....	1.20	....	1.03	....
41-41.9	....	1.22	....	1.05	....
42-42.9	....	1.24	....	1.07	....
43-43.9	....	1.26	....	1.09	....
44-44.9	....	1.28	....	1.11	....
45 and above	....	1.30	....	1.13	....

MIRANDO DISTRICT TEXAS

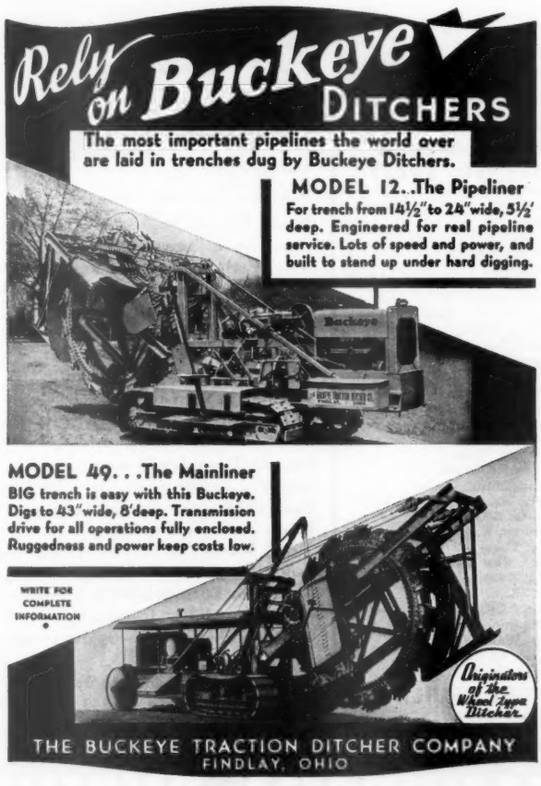
Gravity:	Jan. 1	Aug. 29	Oct. 1	Oct. 11	Dec. 3
Below 20	....	....	....	$.74	$.74
20-20.9	$.96	$.96	$.96	.77	.77
21-21.9	.98	.98	.98	.80	.80
22-22.9	1.00	1.00	1.00	.83	.83
23-23.9	1.02	1.02	1.02	.86	.86
24-24.9	1.04	1.04	1.04	.89	.89
25-25.9	1.06	1.06	1.06	.92	.92
26-26.9	1.08	1.08	1.08	.95	.95
27-27.9	1.10	1.10	1.10	.97	.97
28-28.9	1.12	1.12	1.12	.99	.99
29-29.9	1.14	1.14	1.14	1.01	1.01
30-30.9	1.16	1.16	1.16	1.03	1.03
31-31.9	1.18	1.18	1.18	1.05	1.05
32-32.9	1.20	1.20	1.20	1.07	1.07
33-33.9	1.22	1.22	1.22	1.09	1.09
34-34.9	1.24	1.24	1.24	1.11	1.11
35-35.9	1.26	1.26	1.26	1.13	1.13
36-36.9	1.28	1.28	1.28	1.15	1.15
37-37.9	1.30	1.30	1.30	1.17	1.17
38-38.9	1.32	1.32	1.32	1.19	1.19
39-39.9	1.34	1.34	1.34	1.21	1.21
40 and above	1.36	....	1.36	1.23	1.23
40-40.9	....	1.36	....	1.25	....
41-41.9	....	1.38	....	1.27	....
42-42.9	....	1.40	....	1.31	....
43-43.9	....	1.42	....	1.33	....
44-44.9	....	1.44	....	....	....
45 and above	....	1.46	....	....	....
46-46.9	....	1.50	....	....	....
47-47.9	....	1.52	....	....	....
48-48.9	....	1.54	....	....	....
49-49.9	....	1.56	....	....	....
50 and above	....	....	....	....	....

ANAHUAC, DICKINSON, TEXAS

Gravity:	Jan. 1	Aug. 29	Sept. 19	Oct. 11	Dec. 3
Below 20	....	....	....	$.74	$.74
20	....	....	....	.77	.77
21	....	....	....	.80	.80
22	....	....	....	.83	.83
23	....	....	....	.86	.86
24	....	....	....	.89	.89
25	....	....	....	.92	.92
26	....	....	....	.95	.95
28	....	....	....	.97	.97
27-27.9	....	$1.10	$1.10	.99	.99
28-28.9	....	1.12	1.12	1.01	1.01
29-29.9	....	1.14	1.14	1.03	1.03
30-30.9	$1.16	1.16	1.16	1.05	1.05
31-31.9	1.18	1.18	1.18	1.07	1.07
32-32.9	1.20	1.20	1.20	1.09	1.09
33-33.9	1.22	1.22	1.22	1.11	1.11
34-34.9	1.24	1.24	1.24	1.13	1.13
35-35.9	1.26	1.26	1.26	1.15	1.15
36-36.9	1.28	1.28	1.28	1.17	1.17
37-37.9	1.30	1.30	1.30	1.19	1.19
38-38.9	1.32	1.32	1.32	1.21	1.21
39-39.9	1.34	1.34	1.34	....	1.23
40 and over	1.36	....	....	....	....
40-40.9	....	1.36	1.36	1.23	....
41-41.9	....	1.38	....	1.25	....
42-42.9	....	1.40	....	1.27	....
43-43.9	....	1.42	....	1.29	....
44-44.9	....	1.44	....	1.31	....
45 and above	....	....	....	....	....
45-45.9	....	1.46	....	1.33	....
46-46.9	....	1.48	....	....	....
47-47.9	....	1.50	....	....	....
48-48.9	....	1.52	....	....	....
49-49.9	....	1.54	....	....	....
50 and above	....	1.56	....	....	....

GRAY COUNTY, TEXAS

Gravity:	Jan. 1	Aug. 29	Sept. 19	Oct. 11	Dec. 3
28-28.9	....	....	....	$.72	$.72
29-29.9	....	....	....	.74	.74
30-30.9	....	....	....	.76	.76
31-31.9	....	....	....	.78	.78
32-32.9	....	....	....	.80	.80
33-33.9	....	....	....	.82	.82
34-34.9	....	....	....	.84	.84
Below 35	$.96	$.96	$.96	....	....
35-35.9	.98	.98	.98	.86	.86
36-36.9	1.00	1.00	1.00	.88	.88
37-37.9	1.02	1.02	1.02	.90	.90
38-38.9	1.04	1.04	1.04	.92	.92
39-39.9	1.06	1.06	1.06	.94	.94
40 and over	1.08	....	1.08	....	.96
40-40.9	....	1.08	....	.96	....
41-41.9	....	1.10	....	.98	....
42-42.9	....	1.12	....	1.00	....
43-43.9	....	1.14	....	1.02	....
44-44.9	....	1.16	....	1.04	....
45 and above	....	1.18	....	1.06	....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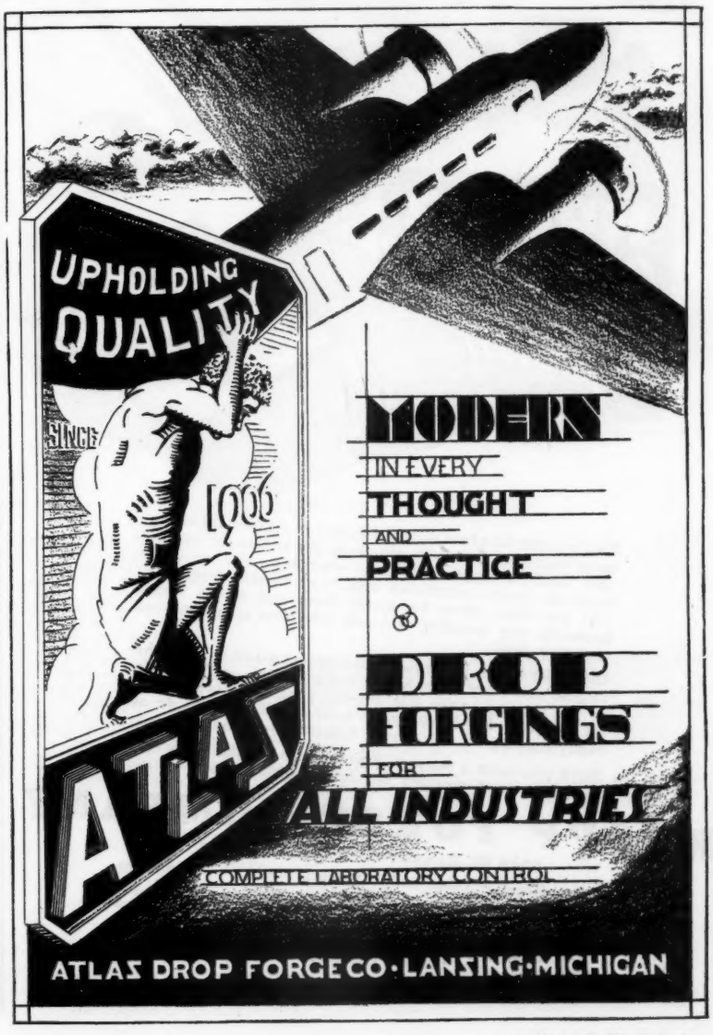

CONROE, RACCOON BEND, TOMBALL, SATSUMA, TEXAS

Gravity:	Jan. 1	Aug. 29	Sept. 19	Oct. 11	Dec. 3
22-22.9	....	....	....	$.95	$.95
23-23.9	....	....	....	.97	.97
24-24.9	....	....	....	.99	.99
25-25.9	....	....	....	1.01	1.01
26-26.9	....	....	....	1.03	1.03
27-27.9	....	....	....	1.05	1.05
28-28.9	....	....	....	1.07	1.07
Below 29	$1.20	$1.20	$1.20	....	....
29-29.9	1.22	1.22	1.22	1.09	1.09
30-30.9	1.24	1.24	1.24	1.11	1.11
31-31.9	1.26	1.26	1.26	1.13	1.13
32-32.9	1.28	1.28	1.28	1.15	1.15
33-33.9	1.30	1.30	1.30	1.17	1.17
34-34.9	1.32	1.32	1.32	1.19	1.19
35-35.9	1.34	1.34	1.34	1.21	1.21
36-36.9	1.36	1.36	1.36	1.23	1.23
37-37.9	1.38	1.38	1.38	1.25	1.25
38-38.9	1.40	1.40	1.40	1.27	1.27
39-39.9	1.42	1.42	1.42	1.29	1.29
40 and over	1.44	....	1.44	....	1.31
40-40.9	....	1.44	....	1.31	....
41-41.9	....	1.46	....	1.33	....
42-42.9	....	1.48	....	1.35	....
43-43.9	....	1.50	....	1.37	....
44-44.9	....	1.52	....	1.39	....
45 and above	....	1.54	....	1.41	....
Conroe flat	....	....	....	1.27	....

SOUTHWEST TEXAS

	Jan. 1	Aug. 29	Oct. 1	Oct. 11
Pettus	$1.37	$1.42	$1.37	$1.29
Salt Flat	1.09	1.09	....	.96
Darst Creek	1.09	1.09	....	.96
Luling	1.00	....	....	.87
Lytton Springs	1.12	....	....	.89
Hilbig	1.09	....	....	....
Clark	1.09	....	....	....
Carroll	1.09	....	....	....
Zoboroski	1.09	....	....	....

CARSON AND HUTCHINSON COUNTIES, TEXAS

Gravity:	Jan. 1	Aug. 29	Sept. 19	Oct. 11	Dec. 3
28-28.9	....	....	....	$.67	$.67
29-29.9	....	....	....	.69	.69
30-30.9	....	....	....	.71	.71
31-31.9	....	....	....	.73	.73
32-32.9	....	....	....	.75	.75
33-33.9	....	....	....	.77	.77
34-34.9	....	....	....	.79	.79
Below 35	$.91	$.91	$.91	....	....
35-35.9	.93	.93	.93	.81	.81
36-36.9	.95	.95	.95	.83	.83
37-37.9	.97	.97	.97	.85	.85
38-38.9	.99	.99	.99	.87	.87
39-39.9	1.01	1.01	1.01	.89	.89
40 and over	1.03	....	1.03	....	.91
40-49.9	....	1.03	....	.91	....
41-41.9	....	1.05	....	.93	....
42-42.9	....	1.07	....	.95	....
43-43.9	....	1.09	....	.97	....
44-44.9	....	1.11	....	.99	....
45 and above	....	1.13	....	1.01	....

Posted by all purchasers.

ROCKY MOUNTAIN STATES

	Jan. 1	May 1	Oct. 11
Iles, Colo., light	$1.18	$1.18	$.98
Iles, Colo., heavy	1.12	1.12	.92
Grass Creek, Wyo., light	1.30	1.30	.90
Grass Creek, Wyo., heavy	.62	.50	.40
Hamilton dome, Wyo.	.67	.45	.35
Elk Basin, Wyo., light	1.30	1.30	.90
Frannie, Wyo., heavy	.62	.62	.42
Frannie, Wyo., light	.70	.65	.55
Big Muddy, Wyo.	1.23	1.23	.98
Rock Creek, Wyo.	1.205	1.205	1.00
Canon City and Florence, Colo.	1.10	1.10	.90
Lance Creek, Wyo.	.97	.97	.77
Cat Creek, Mont.	1.30	1.30	1.10

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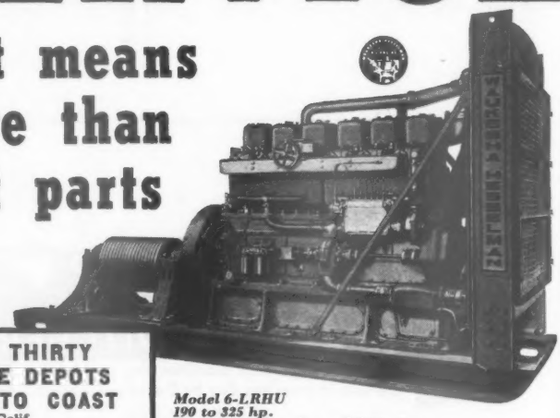
that means more than just parts



Model 6-LRHU
190 to 325 hp.
Waukesha-Hesselman Oil Engine

OVER THIRTY SERVICE DEPOTS COAST TO COAST

Bakersfield, Calif.
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Bradford, Pa.
Centralia, Ill.
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Chase, Kans.
Clarendon, Pa.
Clay City, Ill.
Corpus Christi, Texas
Cut Bank, Mont.
Dallas, Texas
Greggton, Texas
Hobbs, New Mexico
Houston, Texas
Kettleman Hills, Calif.
Long Beach, Calif.
Longview, Texas
McPherson, Kans.
Mt. Pleasant, Mich.
Oakland, Calif.
Oil City, Pa.
Oklahoma City, Okla.
Owensboro, Ky.
Pampa, Texas
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WAUKESHA ENGINES

MIDDLE WESTERN STATES

	Jan. 1	Jan. 5	Jan. 8	June 22	July 1	Aug. 9	Sept. 27	Oct. 1	Oct. 13	Dec. 13	Dec. 19	Dec. 24
Lima†	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$.90	$.90	$.90	$.90
Illinois	1.35	1.35	1.35	1.35	1.35	1.35	1.25	1.25	1.05	1.05	1.05	1.05
Illinois basin	...	...	...	...	...	1.10 to 1.25	1.15 to 1.25	1.15	1.15	1.15	1.15	1.15
Freeman-Redding, Mich.	...	...	...	...	...	1.095	1.095	1.00	.87	.82	.68	.68
Sherman, Mich.	...	...	...	...	...	...	...	...	...	.82	.82	.82
Princeton, Ind.	1.35	1.35	1.35	1.35	1.35	1.35	1.25	1.25	1.05	1.05	1.05	1.05
Midland, Mich.*	1.27	1.12	1.12	1.12	1.12	1.12	1.12	1.025	.925	...	.785	.785
W. Branch, Mich	.80	.80	.80	.80	.80	.90	.90	.84	.74	.70	.70	.70
Arenac, Mich.	.80	.80	.80	.80	.80	.90	.90	.84	.74	.70	.70	.70
Buckeye, Mich.	1.245	1.245	1.095	1.095	1.095	1.095	1.00	1.00	.90	.90	.76	.76
Muskegon, Mich.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Eastern Kentucky:												
Big Sandy River	1.42	1.42	1.42	1.42	1.32	1.32	1.32	1.22	1.22	1.12	1.12	1.12
Kentucky River	1.50	1.50	1.50	1.50	1.40	1.40	1.40	1.30	1.30	1.20	1.20	1.20
Western Kentucky	1.40	1.40	1.40	1.30	1.30	1.30	1.20	1.20	1.10	1.10	1.10	1.05

*Posted by Pure Oil Co. and Simrall Corp. and includes Greendale, Porter, Beaverton, Sherman, Chippewa, Allegan, and equal grades. West Branch, Mich., and Arenac, by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Pure Oil Co. and Simrall Corp. †Effective May 25, Owensboro Pipe Line Co. posted a 10-cent reduction on Centralia, Ill., crude making price $1.25 per barrell.

REFUGIO, GRETA, SAXET AND TAFT COUNTIES

	Jan. 1	Aug. 29	Oct. 1	Oct. 11*
Below 20	...	...	...	$.79
20-20.9	$1.01	$1.01	$1.01	.82
21-21.9	1.03	1.03	1.03	.85
22-22.9	1.05	1.05	1.05	.88
23-23.9	1.07	1.07	1.07	.91
24-24.9	1.09	1.09	1.09	.94
25-25.9	1.11	1.11	1.11	.97
26-26.9	1.13	1.13	1.13	1.00
27-27.9	1.15	1.15	1.15	1.02
28-28.9	1.17	1.17	1.17	1.04
29-29.9	1.19	1.19	1.19	1.06
30-30.9	1.21	1.21	1.21	1.08
31-31.9	1.23	1.23	1.23	1.10
32-32.9	1.25	1.25	1.25	1.12
33-33.9	1.27	1.27	1.27	1.14
34-34.9	1.29	1.29	1.29	1.16
35-35.9	1.31	1.31	1.31	1.18
36-36.9	1.33	1.33	1.33	1.20
37-37.9	1.35	1.35	1.35	1.22
38-38.9	1.37	1.37	1.37	1.24
39-39.9	1.39	1.39	1.39	1.26
40 and above	1.41	...	1.41	...
40-40.9	...	1.41	...	1.28
41-41.9	...	1.43	...	1.30
42-42.9	...	1.45	...	1.32
43-43.9	...	1.47	...	1.34
44-44.9	...	1.49	...	1.36
45 and above	...	...	...	1.38
45-45.9	...	1.51	...	...
46-46.9	...	1.53	...	...
47-47.9	...	1.55	...	...
48-48.9	...	1.57	...	...
49-49.9	...	1.59	...	...
50 and above	...	1.61	...	...

*Dec. 3 price range ended 39-39.9

RODESSA, LOUISIANA AND TEXAS

Gravity—	Jan. 1	Oct. 11*
Below 25	$.93	$.73
25-25.9	.95	.75
26-26.9	.97	.77
27-27.9	.99	.79
28-28.9	1.01	.81
29-29.9	1.03	.83
30-30.9	1.05	.85
31-31.9	1.07	.87
32-32.9	1.09	.89
33-33.9	1.11	.91
34-34.9	1.13	.93
35-35.9	1.15	.95
36-36.9	1.17	.97
37-37.9	1.19	.99
38-38.9	1.21	1.01
39-39.9	1.23	1.03
40 and over	1.25	1.05

WEST TEXAS, (EXCEPT PECOS COUNTY) AND LEA COUNTY, NEW MEXICO

Gravity—	Jan. 1	Oct. 11
Below 20	...	$.53
20-20.9	...	.55
21-21.9	...	.57
22-22.9	...	.59
23-23.9	...	.61
24-24.9	...	.63
25-25.9	$.78	.65
26-26.9	.80	.67
27-27.9	.82	.69
28-28.9	.84	.71
29-29.9	.86	.73
30-30.9	.88	.75
31-31.9	.90	.77
32-32.9	.92	.79
33-33.9	.94	.81
34-34.9	.96	.83
35-35.9	.98	.85
36-36.9	1.00	.87
37-37.9	1.02	.89
38-38.9	1.04	.91
39-39.9	1.06	.93
40 and over	1.08	.95

EAST CENTRAL TEXAS

(Mexia District)

Gravity—	Jan. 1	Oct. 11
23-23.9	...	$.78
24-24.9	...	.80
25-25.9	...	.82
26-26.9	...	.84
27-27.9	...	.86
28-28.9	...	.88
Below 29	$1.03	...
29-29.9	1.05	.90
30-30.9	1.07	.92
31-31.9	1.09	.94
32-32.9	1.11	.96
33-33.9	1.13	.98
34-34.9	1.15	1.00
35-35.9	1.17	1.02
36-36.9	1.19	1.04
37-37.9	1.21	1.06
38-38.9	1.23	1.08
39-39.9	1.25	1.10
40 and over	1.27	1.12

PENNSYLVANIA GRADE OIL

Posted by Tide Water Associated Oil Co. and New York Transit Co.:	Jan. 1	Mar. 7	June 13	June 16	Sept. 1	Oct. 18
Bradford, Pa.	$2.20	$2.05	$1.80	$1.80	$1.68	....
Allegany, N. Y.	2.20	2.05	1.80	1.80	1.68	....
Posted by South Penn Oil Co.:						
Pennsylvania Grade oil in National Transit lines (Bradford field)	2.20	2.05	1.80	1.80	1.68	....
Pennsylvania Grade oil in Southwest Pennsylvania lines	1.88	1.71	1.46	1.46	1.34	....
Pennsylvania Grade oil in Eureka Pipe Line lines	1.82	1.65	1.40	1.40	1.28	....
Pennsylvania Grade oil in Buckeye Pipe Line lines	1.70	1.55	1.30	1.30	1.18	....
Corning grade oil in Buckeye Pipe Line Co. lines	1.27	1.27	1.27	1.17	....	$0.97
Posted by Pennzoil Co.:						
Pennsylvania Grade oil in National Transit lines:						
Group A	2.15	1.98	1.73	1.73	1.61	....
Includes Cochran, Franklin, Hamilton, and Doolittle districts.						
Group B	2.14	1.97	1.72	1.72	1.60	....
Includes Titusville district.						
Group C	2.13	1.96	1.71	1.71	1.50	....
Includes Turkey and Tidioute districts.						
Group D	2.12	1.95	1.70	1.70	1.58	....
Includes Bear Creek and Porkey districts.						
Group E	2.10	1.93	1.68	1.68	1.56	....
Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacy, and Kinzau districts. Price depends on length of pipe line to plant at Oil City.						
Posted by Pure Oil Co.:						
Cabin Creek, W. Va.	1.82	1.65	1.40	1.40	1.28	....
Bradford Hollow, W. Va.	1.82	1.65	1.40	1.40	1.28	....
Kelly Creek, W. Va.	1.82	1.65	1.40	1.40	1.28	....

GULF COAST

	Jan. 1	Oct.12
Clay Creek, Tex.	$1.00	...
Garden Island, La.	1.37	1.24
Cleveland, Tex.	1.27	1.14
Hardin, Tex.	1.15	1.02
Lafitte, La.	1.24	1.04
Livingston, Tex.	1.27	1.10
Welsh, La.	.98	...
Tepetate, La.	1.24	1.03
Black Bayou and White Castle, La. (Oct. 11, 1938)	...	see below
Villa Platte, La. (Oct. 11, 1938)	...	1.03
Abbeville, La. (Oct. 11, 1938)	...	see below
Bosco, La. (Oct. 13, 1938)	...	1.02
Creole, La. (Oct. 12, 1938)	...	.96
Gueydan, Sweet Lake and Louise, La. (Oct. 13, 1938)	...	see below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)	...	...
Long Lake, Tex. (Oct. 13, 1938)	...	1.08
Segno and Wing (Oct. 13, 1938)	...	see below
Gibson, La. (Oct. 11, 1938)	...	1.04

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents, 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, $1.01, 2-cent spread to 40 degrees and over at $1.11. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26-26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

VAN, TEXAS

	Jan. 1	Oct. 11
Van, Texas	$1.10	$.93

GOVERNMENT WELLS, TEXAS

Gravity—	Jan. 1	Oct. 13
Below 18	...	...
18-18.9	...	...
19-19.9	...	...
20-20.9	$.90	$.77
21-21.9	.93	.80
22-22.9	.96	.83
23-23.9	.99	.86
24-24.9	1.02	.89

TALCO

	Jan. 1	Oct. 11
Talco field	$.73	$.55

EAST TEXAS

	Jan. 1	Oct. 11
East Texas	$1.35	$1.10

FLOUR BLUFF, TEXAS

	Aug. 29	Oct. 11	Dec. 3
Flour Bluff	$1.40	$1.27	$1.23

GULF COAST

Gravity:	Jan. 1 Schedule No. 1	Jan. 1 Schedule No. 2	Apr. 1 Schedule No. 1	Apr. 1 Schedule No. 2	Oct. 11
Below 18	$.90	....	$.95	....	....
18-18.9	.92	....	.95	....	....
19-19.9	.94	....	.95	....	$.79
Below 20	...	...	...	...	...
20-20.9	.96	$.95	.95	$.95	.82
21-21.9	.98	.98	.98	.98	.88
22-22.9	1.01	1.01	1.01	1.01	.88
23-23.9	1.04	1.04	1.04	1.04	.91
24-24.9	1.07	1.07	1.07	1.07	.94
Below 25	...	...	...	...	...
25-25.9	1.10	1.10	1.10	1.10	.97
26-26.9	1.13	1.13	1.13	1.13	1.00
27-27.9	1.15	1.15	1.15	1.15	1.02
28-28.9	1.17	1.17	1.17	1.17	1.04
Below 29	...	...	...	...	...
29-29.9	1.19	1.19	1.19	1.19	1.06
30-30.9	1.21	1.21	1.21	1.21	1.08
31-31.9	1.23	1.23	1.23	1.23	1.10
32-32.9	1.25	1.25	1.25	1.25	1.12
33-33.9	1.27	1.27	1.27	1.27	1.14
34-34.9	1.29	1.29	1.29	1.29	1.16
Below 35	...	...	...	...	...
35-35.9	....	....	1.31	....	1.18
36-36.9	....	....	1.33	....	1.20
37-37.9	....	....	1.35	....	1.22
38-38.9	....	....	1.37	....	1.24
39-39.9	....	....	1.39	....	1.26
40 and over	....	....	1.41	....	1.28

Schedule No. 1 posted by the Texas Co. (Gulf Refining Co. pays same prices up to and including 34-gravity but continues its 2-cent spread up to 40 and over at $1.41.)
Schedule No. 2 posted by Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co. and Sun Oil Co.

NORTH LOUISIANA AND ARKANSAS

	Jan. 1	Sept. 16	Sept. 17	Sept. 19	Oct. 5
Smackover, Ark.:					
All grades	$.90	$.75	....	....	$.73
Tullos and Urania	1.02	....	....	....	.89
El Dorado East field	.90	....	....	....	....
Union County, Ark.	.90	....	....	....	....
Ouachita County, Ark.	.90	....	....	....	....
Lisbon, La.*	.98	....	....	.88	....
Schuler (Jones sand)	....	....	†.85	....	....

*Posted by Caddo Crude Oil Purchasing Co. Effective September 19, Caddo Crude Oil Purchasing Corp. announced the following Lisbon crude price schedule: Below 34 gravity, 88 cents, with a 2-cent differential to 35 and above at 92 cents. Caddo Crude Oil Purchasing Co. reduced its Lisbon, La., crude oil price 5 cents per bbl. effective October 1, posting 83 cents for below 34 gravity, and a 2-cent differential up to 87 cents for 35 gravity and above.

†Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938, Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

CANADIAN FIELDS

Ontario:	Jan. 1	Jan. 5	Oct. 25
Petrolia	$2.10	$2.10	$1.90
Oil Springs	2.17	2.17	1.97
Turner Valley, Alberta Province:			
Clear naphtha and discolored naphtha, 65 gravity and higher	2.36	2.14	...
Discolored naphtha and crude oil, 40-40.9 gravity	1.36	1.14	...
Increasing 2 cents for for each degree of gravity with top price for 64-64.9 gravity	1.84	1.62	...

These prices delivered field tankage. Posted by Imperial Oil Co., Ltd.

Death Roll of Oil and Gas Industry in 1938 Included Many Widely Known

The oil and gas industry was bereft of many valuable men during 1938. Following is a list of those whose passing was recorded in The Oil and Gas Journal during the past year.

A

Adams, William Ellsworth, 72, superintendent, Savoy Oil Co., Tulsa, September 1.

Albert, L. H., 21, pumper, Graham, Tex., February.

Alexander, Howard T., 70, retired president, H. T. Alexander Oil Co., East Orange, N. J., February.

Arsenault, Miss Renee, Imperial Oil Co., Calgary, Canada, March.

Ashworth, A. A., 71, refinery expert, July

B

Bailey, Roy B., 31, Phillips Petroleum Co., Odessa, Tex., June 24.

Baker, Charles W., 57, T. B. Slick interests, Tulsa, September 1.

Baker, Norman R., manager real estate division, Texas Co., New York, October 19.

Baskin, Robert Young, 26, seismograph division, Shell Petroleum Corp., Cameron, La., February.

Bass, Charles M., 49, Sinclair Prairie Oil Co., Nowata, Okla., June.

Bates, A. A., 36, office manager, Amsco Refining Co., Corpus Christi, Tex., February 1.

Bayless, Daniel O'Connell, Sr., head land department, South Texas division, Texas Co., December 29.

Beach, Ormond, 27, oil man, Sarnia, Ontario, September 21.

Beatty, L. M., 89, pioneer drilling contractor, Bartlesville, Okla., March.

Becker, Clyde M., consulting geologist, Chickasha, Okla., July 19.

Bickell, Charles Henry, 69, assistant to president, Tide Water Associated Oil Co., Passaic, N. J., June.

Black, E. R., 55, retired district superintendent, Sinclair Prairie Oil Co., Tulsa, September.

Blackman, Carl R., 53, oil operator, Tulsa, Okla., June 14.

Bloemer, Charles W., 54, General Petroleum Co., Bakersfield, Calif., August.

Boocks, Francis M., 81, producer, Bradford, Pa., July 25.

Botkins, Allison, 57, superintendent East Texas district, Rogers Lacy, Kilgore, Tex., October 13.

Boyle, Edward R., 58, president, Derrick Publishing Co., Oil City, Pa., August 20.

Bradley, George H., 73, pioneer oil man, Bolivar, N. Y., February 5.

Brashear, J. V., 30, oil man, Iowa Park, Tex., July.

Brereton, Arthur M., 46, comptroller, Pure Oil Co., Winnetka, Ill., June 16.

Brodie, James, 65, oil man, Nelson, British Columbia, April.

Bryner, Elmer E., 76, pioneer operator, Custer City, Pa., July.

Burns, Bob, 38, former scout, Dallas, Tex., June.

Burns, Robert James, vice president, Grease Creek Petroleum, Ltd., Calgary, Canada, April.

Bushnell, Charles Elmer, 80, retired treasurer, Atlantic Refining Co., Philadelphia, Pa., May.

C

Camp, C. F., secretary-treasurer, Arrow Drilling Co., and independent producer, Tulsa, July 11.

Campbell, Charles Edward, 69, Black, Sivalls & Bryson, Inc., Bartlesville, Okla., May 5.

Campbell, Clinton Dudley, 52, executive, Socony-Vacuum Oil Co., Essex, N. Y., July 10.

Campbell, Donald I., 32, Shell Petroleum Co., Houston, Tex., October.

Campbell, Gordon, 64, oil man, Kevin, Mont., May 31.

Cann, George H., 62, division manager, National Supply Co., San Joaquin Valley, California, January 28.

Cary, Logan W., 54, oil man, Oklahoma City, July 7.

Carpenter, William Harvey, 77, oil producer, Detroit, Mich., November 20.

Chields, Harold P., 57, vice president, Missouri-Kansas Pipe Line Co., December.

Christian, Ernest Godwin, 63, pioneer oil man, Liberty, Tex., March.

Clarke, G. C., owner, Western American Oil Co., Bartlesville, Okla., March 7.

Clarke, Robert Davis, 64, oil operator, Los Angeles, Calif., April.

Coates, Frank R., director, Cities Service Co., New York City, June 27.

Cochrane, John T., president, Coastal Petroleum Co., Mobile, Ala., January 12.

Collins, Frank, 67, vice president, National Supply Co., Toledo, Ohio, February 12.

Conradson, Dr. Pontus H., 86, petroleum chemist, Franklin, Pa., January 21.

Cook, Adam B., 70, driller, Pittsburgh, Pa., April.

Corby, Frank F., Jones & Laughlin Steel Corp., Pittsburgh, July.

Corwin, Charles H., 59, oil producer, Bradford, Pa., November 22.

Craig, Robert E. L., assistant district manager, Gulf Oil Corp., San Antonio, Tex., June.

Crain, Earl G., 49, vice president, Bovard & Seyfang, Bradford, Pa., September 1.

Cremin, Eugene Francis, 61, oil man, Tulsa, Okla., February 18.

Cress, L. E., 50, oil operator, Wichita, Kans., April.

Crone, Edward M., 46, secretary, Texas Corp., Bronxville, N. Y., June 20.

Crosbie, John E., 75, pioneer oil operator, Tulsa, Okla., June 21.

Crosby, Allen Wynn, 59, Houston, Tex., January 7.

Crosby, George R., Sun Oil Co., Jacksonville, Fla., March.

Currie, Burt W., 59, oil producer, Knapp Creek, New York, March 7.

Curry, Frank J., 59, oil man, Tulsa, Okla., March 6.

D

Davies, Thomas D., assistant to vice president, National Tube Co., McKeesport, Pa., May 28.

Delong, Ruben J., 70, pioneer driller and producer, Cleveland, Okla., August 1.

Deverse, Clyde O., 50, district superintendent, I.T.I.O. Co., Oklahoma City, Okla., February 1.

Dillard, J. R., 72, Wichita Falls, Tex., September 21.

Doolittle, C. H., Mansfield, La., January 12.

Donnell, William H., 94, auditor, Standard Oil Co. of New Jersey, Montclair, N. J., December.

Drane, Frank M., president, Drane Tank Co., Fort Worth, Tex., August 21.

Dunigan, W. A., 51, former president, National Tank Seal Co., Tulsa, Okla., March 16.

Dunn, Felix C., drilling contractor, Tyler, Tex., August.

Duston, Arthur W., 52, geologist, Tulsa, Okla., February 2.

Dymond, E. A., 54, field superintendent, Mid-Continent Petroleum Corp., Ellinwood, Kans., December 23.

E

Ebie, A. C., 74, retired vice president and general manager, Magnolia Petroleum Co., Dallas, Tex., February 26.

Emery, Bailey V., 44, secretary-treasurer, Dixie Oil & Gas Co., Tulsa, July.

Emmons, George E., 80, vice president, General Electric Co., Pasadena, Calif., July.

Evans, Arthur G., 59, assistant treasurer, Gulf Refining Co., Port Arthur, Tex., February 9.

Exley, Lewis E., 67, producer, Kossuth, Pa., June 15.

F

Faine, A. E., 63, producer, Marietta, Ohio, March 4.

Farrell, J. Fletcher, director, Consolidated Oil Corp., New York, September 25.

Findley, Al, former employe, Texas Pipe Line Co., Shreveport, La., February 17.

Fisher, Henry, 79, retired director, Standard Oil Co. of New York, New York City, May 17.

Fisher, Jasper H., Fisher Governor Co., Orange City, Calif., September.

Fisher, Leslie A., 36, geologist, Sinclair Prairie Oil Co., Galveston, Tex., April 1.

Flynn, P. B., 50, oil operator, Wichita Falls, Tex., September 30.

Flynn, William B., 48, former oil executive, Baton Rogue, La., April.

Foley, George E., president, Murphy Oil Co., Whittier, Calif., June 20.

Franchot, Nicholas V. V., II, 55, oil man, Niagara Falls, N. Y., December 14.

Francis, William C., 61, oil operator, Tulsa, August 20.

Freeman, W. D., 73, operator, Mexia, Tex., May 30.

Fuhrman, Max, 42, retired operator, San Francisco, September.

Fuller, E. E., oil operator, Durant, Okla., March 2.

G

Gardner, Charles F., 53, lease man, W. C. McBride, Inc., Tulsa, Okla., March 26.

Gates, William F., 71, retired oil man, Independence, Kans., November 24.

Gillespie, J. I., 62, oil operator, Yates Center, Kans., July.

Gilman, R. L., 60, oil operator, Cisco, Tex., June.

Gleghorn, C. O., 51, Goodrich Rubber Co., Detroit, Mich., February 9.

Golden, John E., 73, retired president, Tide Water Pipe Line Co., Ltd., Bradford, Pa., February 4.

Golding, Dudley, president, American Liberty Oil Co., Dallas, Tex., March 4.

Gray, C. F., 51, oil man, Nowata, Okla., January 6.

Greene, T. B., vice president, Buckeye Pipe Line Co., Lima, Ohio, February 12.

Greene, H. H., 38, vice president, Kendall Refining Co., September.

Greve, Edgar Eugene, retired chief engineer, Oil Well Supply Co., Dallas, Tex., March 6.

Griffin, Thomas, 69, pipe department foreman, Baytown Humble refinery, Baytown, Tex., September.

Guthrie, Millard G., 57, drilling contractor, Sapulpa, Okla., March 6.

Gunn, Earl H., 41, superintendent, Col-Tex refinery, Colorado, Tex., December 15.

H

Hales, W. T., 71, oil operator, Oklahoma City, September.

Hamilton, James F., 40, rig builder, Wichita Falls, Tex., February.

Hannis, William L., 70, oil man, Tulsa, Okla., May 27.

Hanratty, Bernard J., 93 retired oil man, Tulsa, Okla., March 10.

Harris, Warren, 66, Harris Pump & Supply Co., Camden, S. D., February 14.

Harvey, John Joseph, 63, oil man, Oil City, Pa., July 5.

Hawn, Russell John, vice president, Monsanto Chemical Co., Birmingham, Ala., October.

Haylett, Robert E., director, Union Oil Co. of California, Los Angeles, Calif., June 13.

Heenan, C. P., oil man, Oklahoma City, August.

Henderson, George F., 74, natural gas referee, Ottawa, Canada, August.

Hensel, Herman L., Sr., 55, Sinclair Prairie Oil Co., Tulsa, August 17.

Herring, Charles M., engineer, Iran, June.

Heyser, E. S., oil operator, Dallas, Tex., March.

Holland, James Thomas, 58, president, Rio Bravo Pioneer Oil Co., Handsburg, Calif., July 10.

Hollenback, Joe T., oil man, Oklahoma City, Okla., March 21.

Holt, C. Parker, vice president, Caterpillar Tractor Co., Piedmont, Calif., August 24.

Hosler, W. F., 78, chairman board of directors, Buckeye Traction Ditcher Co., Findlay, Ohio, September.

Hudson, Stephen C., 66, retired, Standard Oil Co. of California, Bakersfield, July 25.

Huffman, Frank J., 60, vice president, South Penn Oil Co., Pittsburgh, Pa., December 2.

Huffman, J. D., 75, veteran oil operator, Coffeyville, Kans., July.

Hunt, Noel, 27, Phillips Petroleum Co., Corpus Christi, Tex., October 13.

I

Ice, L. F., 47, drilling contractor, Tulsa, Okla., March 24.

J

Jackson, Fred W., 78, oil producer, Chicora, Pa., October.

Jacobs, Leo., 68, operator, St. Louis, Mo., October.

Jenkins, J. H., vice president, Tide Water Associated Oil Co., San Francisco, Calif., May.

Johnson, Alba B., Jr., 51, Atlantic Refining Co., Philadelphia, Pa., March.

Jondahl, Floyd N., 49, secretary, Producers Oil Co. of Kansas, Wichita, Kans., April.

Jones, W. R. (Tex), 52, oil operator, Wichita, Kans., February 26.

Jordan Daniel E., 85, retired, Sinclair Prairie Oil Co., Tulsa, Okla., February 27.

K

Keery, Abram, 70, producer, Custer City, Pa., March.

Keith, Seth Lionel, 71, driller, Sault Ste. Marie, Ontario, December.

Kelley, Otis, 41, oil field worker, Oklahoma City, Okla., March 16.

Ketchum, Edwin Nesbitt, Jr., 57, oil man, Ponca City, Okla., September.

Key, James Thomas, 70, oil man, Carson, Tex., September.

Keys, John H., 38, oil man, Vernon, Tex., March.

Kinley, Floyd Tipton, 33, international oil fire fighter, Tulsa, Okla., March 12.

L

Laidlaw, Henry, Worthington Pump & Machinery Corp., Kingsville, Canada, August.

Lake, M. E., 35, vice president, Coast Line Oil Corp., San Antonio, Tex., September 8.

Lang, Otis R., 57, drilling contractor, Alberta, Canada, January.

Leebove, Isaiah, 42, general manager, Mammoth Producing & Refining Corp., Clare, Mich., May 14.

Leonard, John W., 70, pioneer operator, Washington, Pa., January 25.

Lewis, D. L., 50, oil well contractor, Lockhart, Tex., October.

Lobaugh, M. H., 70, operator, Eastland, Tex., February 11.

Lockhart, James H., 75, oil man, Pittsburgh, Pa., May 16.

Lohman, Zeke, 49, driller, Flora, Ill., January 18.

Longaker, L. C., 82, vice president, National Transit Co., Oil City, Pa., April 3.

Looker, John C., 84, oil producer, Bradford, Pa., August 31.

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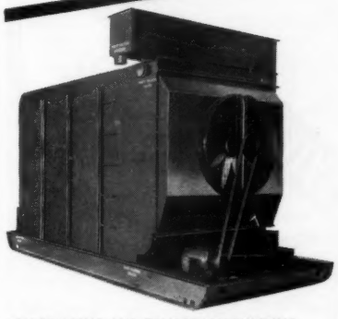
The Marley line for 1939 offers the accumulated advantages of the longest and broadest experience at building heat-transfer equipment plus important features developed during 1938 by a veteran research and engineering staff. Yet prices have been reduced.

The wide diversity of types, a few of which are shown here, permits the efficient, economical solution of any water cooling problem. It will pay you to call in your nearest Marley engineer whatever your needs may be.



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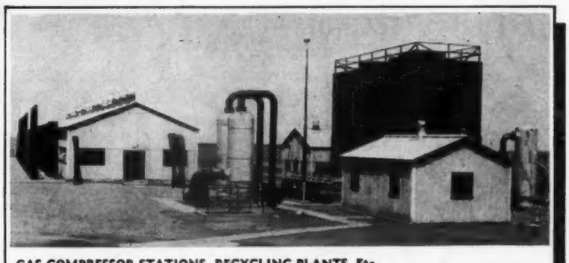
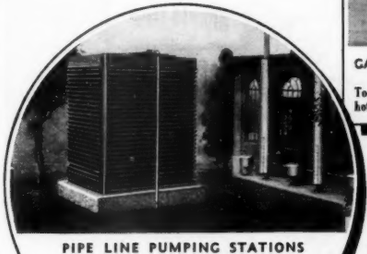
Rapidly coming into prominence as the most efficient and economical method of cooling soft jacket-water for 300 to 800 h.p. engines which must be moved to new locations at intervals, these portable units provide many new advantages for saving operators time, trouble and money through better engine performance.



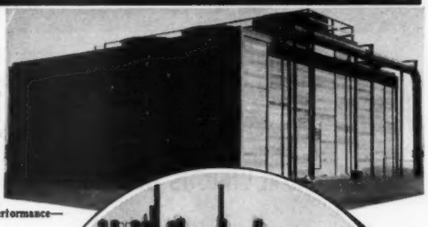
GAS COMPRESSOR STATIONS, RECYCLING PLANTS, Etc.

Where multiple closed-system cooling services are combined in one unit, large Marley Induced-Draft Towers have proved themselves highly efficient. This tower, as an example, cools both jacket water and hot gas, each through special heat-exchange coils also manufactured by Marley.



PIPE LINE PUMPING STATIONS

For this type of service, either open or closed system, Marley Spray and Spray-Coil Towers are in wide use.



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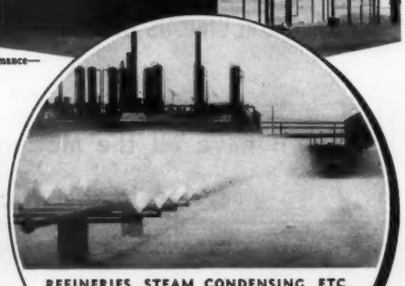

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Where a large capacity, heavy-duty water cooling system is required and an open area available, a spray pond is often recommended. Marley Spray Ponds are famed for higher efficiency and lower operating cost.

The MARLEY Company

Fairfax and Marley Roads, Kansas City, Kansas

Lorenze, John C., 96, oil man, Grand Valley, Pa., March.

Lott, Albert G., 51, superintendent, Hinderliter Tool Co., Tulsa, Okla., May 27.

Louis, Frank I., president, Highway Oil Refining Corp., Tulsa, Okla., March 3.

Mc

McCarty, John F., 55, district manager, Sinclair Refining Co., Milwaukee, Wis., July 21.

McCray, Dan, 74, Standard Oil Co., Houston, Tex., December.

McCord, L. N., 30, geologist, Hattiesburg, Miss., February.

McDonald, John A., 63, retired pipe line foreman, Tulsa, Okla., March 20.

McElroy, Robert H., 61, vice president, Standard Oil Co. (Indiana), Evanston, Ill., June 25.

McGee, C. B., 70, retired driller, Wichita, Kans., May 23.

McKee, E. J., 55, Dallas, Tex., January.

McKnight, C. C., 65 retired oil operator, Long Beach, Calif., July.

McLaughlin, Richard, 85, former employe, National Transit Co., Bradford, Pa., March 7.

McLaughlin, William J., oil operator, Denver, Colo., September.

McLeod, E. H., 51, operator, Okotoks, Alberta, Canada, January.

McNair, Charles, 56, Imperial Oil, Ltd., Kingston, Jamacia, May.

McNally, John M., 59, division superintendent, Stanolind Pipe Line Co., Tulsa, August 12.

M

Machris, Alfred Paul, 58, secretary-treasurer, Wilshire Oil Co., Los Angeles, August 25.

Maire, Frank L., 68, producer, Lima, Ohio, May 15.

March, Raymond A., 40, drilling engineer, Shell Oil Co., Hill City, S. D., July.

Marsh, C. T., general purchasing agent, Gulf Oil Corp., Pittsburgh, Pa., July.

Mays, Eugene, 35, oil man, San Antonio, Tex., June 16.

Meals, Samuel J., 82, driller, Wichita Falls, Tex., February 9.

Megahan, D. B. (Don), operator, Robinson, Ill., February 2.

Mencacci, Frank, 32, Gulf Refining Co., Galveston, Tex., March.

Merchant, Ambrose, 57, oil man, Houston, Tex., June.

Merriam, Arch E., 55, operator, Wichita, Kans., February 1.

Miller, Fred, retired president, S. R. Dresser Manufacturing Co., Bradford, Pa., August 22.

Miller, Robert S., secretary, J. Edgar Pew, Sun Oil Co., Philadelphia, August 11.

Miller, Walter, Jr., 36, Continental Oil Co., Chicago, November 24.

Miller, George Wallace, 44, sales engineer, Universal Oil Products Co., Tulsa, December 14.

Mong, Charles, 68, oil operator, Waynesburg, Pa., September.

Moody, Joseph Francis, 55, Walter O'Bannon Co., Tulsa, Okla., February 22.

Moriarty, Joseph Robison, 63, oil operator, Okmulgee, Okla., August 25.

Moynihan, Eugene, 63, tankage superintendent, Stanolind Pipe Line Co., Ranger, Tex., April.

Muir, John, 52, geologist, Sydney, Australia, January.

Mullendore, E. C., operator, Cleveland, Okla., January 18.

Munsey, C. A., district gauger, Stanolind Pipe Line Co., Skiatook, Okla., June 16.

Murdock, John 36, rig foreman, Oklahoma City, Okla., March.

Murphy, William A., 60, oil man, Alberta, Canada, June.

N

Neath, Charles, 57, superintendent, Union Gas Co., Hamilton, Canada, August.

Neath, Howard A., district foreman, Humble Pipe Line Co., Pampa, Tex., December 20.

Neville, Paul, rig builder, Beaumont, Tex., March.

Newton, Frank J., 45, oil producer, Bradford, Pa., July 13.

O

O'Donnell, Patrick J., 57, oil producer, Abilene, Tex., July 21.

O'Mara, John T., 64, production department, Iroquois Gas Co., Buffalo, N. Y., September.

P

Page, K. F., 41, oil operator, Eastland, Tex., October.

Patterson, Earle F., 56, oil man, Muskogee, Okla., December.

Perkins, J. Clarence, 53, field manager, Perkins Cementing, Inc., Norwalk, Calif., June.

Perryman, J. T., 82, oil man, Oklahoma City, Okla., February 17.

Perryman, Charles A., American Chain & Cable Co., Houston, Tex., April 12.

Pfeifer, Carl L., treasurer, Chain Belt Co., Philadelphia, Pa., September.

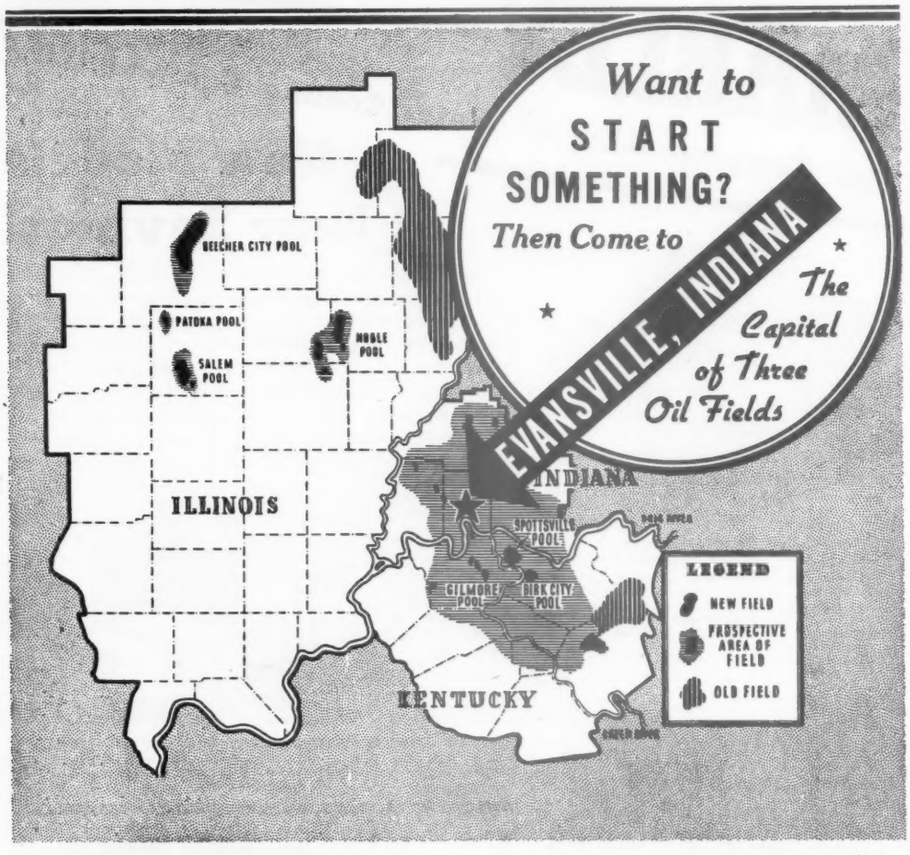
Philbrook, J. Brayton, petroleum geologist and engineer, Los Angeles, Calif., July.

Phillips, Hilton A., 38, president, Hilton Phillips, Inc., Oklahoma City, Okla., February.

Pickerel, J. W., oil field worker, Burkburnett, Tex., February.

Pierson, J. B. (Buzz), National Supply Co., Columbus, Ohio, February.

Pigue, W. W., Sr., Gulf Publishing Co., Martin, Tenn., February 14.



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EVANSVILLE CHAMBER OF COMMERCE

Evansville, Indiana

Polk, M. L., 35, production superintendent, Windsow Oil Co., Houston, Tex., April.

Powers, Willis H., 78, retired oil producer, Bradford, Pa., April 15.

Pratt, Thomas H., 78, general manager, Pratt-Hewitt Oil Co., Houston, Tex., September 3.

Pressinger, Arnott, 73, retired assistant controller, Standard Oil Co. of New Jersey, New York City, December 29.

Priestley, George C., 76, retired operator, Titusville, Pa., April 15.

R

Ramey, James F., 45, oil field worker, Rodessa, La., March 5.

Rawson, William, 77, driller, Santa Anna, Calif., February.

Ray, George B., 60, operator, Wichita Falls, Tex., September 15.

Reader, Earl W., 50, oil man, Wyoming, May.

Reed, A. G., 61, former vice president, Cosden Oil Corp., Fort Worth, Tex., October.

Rhodes, William L., 38, producer, Coleville, Pa., April 4.

Richard, Edwin V., 42, operator, Houston, September.

Richmond, S. B., refinery worker, Overton, Tex., February.

Riley, E. J., 43, oil operator, Tulsa, Okla., December 20.

Riley, John Richard, 56, gauger, Sinclair Pipe Line Co., Jenks, Okla., April 17.

Robertson, William Eddie, 54, Standard-Vacuum Oil Co., Shanghai, China, April.

Ronaldson, W. J., independent operator, Tulsa, Okla., October.

Ross, C. C., 54, former minister of lands and mines for Alberta, Vancouver, British Columbia, September 12.

S

Salsbury, Col. E. K., 73, president, Sal-Mar Oil Corp., San Antonio, July 12.

Sanford, Melville D., 62, former oil man, San Bernardino, Calif., September.

Schaffer, Floyd, 30, geologist, Phillips Petroleum Co., August.

Schneider, Frank, 67, division superintendent, Tide Water Associated Oil Co., Midland, Tex., February.

Scott, H. W., 61, pioneer oil man, Odessa, Tex., September.

Shaffer, M. R., 45, Bartlesville, Okla., January 11.

Shaffer, O. R., 63, oil scout, Sapulpa, Okla., February 21.

Shinn, William H., 67, oil man, Bartlesville, Okla., March 26.

Simms, Edward F., 68, oil operator, Houston, Tex., December.

Sivalls, James A., 71, Black, Sivalls & Bryson, Inc., Bartlesville, Okla., February 8.

Sloan, E. Hamilton, 94, oil pioneer, Grove City, Pa., December.

Sloan, James Wallace, 68, president, International Supply Co., Tulsa, Okla., February 18.

Smith, L. A., superintendent, Norway-Clinton Oil Co., Bullion, Pa., February.

Smith, M. H., 60, retired drilling contractor, Shreveport, La., June 1.

Smith, Elbert, 27, refinery engineer, Guthrie, Okla., June.

Smith, Harvey A., 32, oil field worker, Tulsa, Okla., March.

Smith, William Blake, 56, oil man, Mexia, Tex., August.

Snyder, David Hiram, 62, oil man, Bartlesville, Okla., March 17.

Southern, Wheaton I., 51, producer, Tulsa, Okla., February 23.

Stahl, Edwin S., 51, oil operator, Oklahoma City, Okla., June 12.

Steele, Gayle A., 54, president, Sinclair-Pierce Oil Co., Mexico, February.

Steinberger, George, 57, producer, Independence, Kans., April.

Sterling, Frank P., retired vice president, Humble Oil & Refining Co., San Antonio, July 16.

Stewart, Maco, independent producer, Galveston, Tex., December.

Stoner, Robert G., Standard Oil Co., Dutch East Indies, April.

Sugden, Walter Smith, 58, oil attorney, Sistersville, W. Va., July 7.

Swaney, James, 24, manager, Kerotest Manufacturing Co., Odessa branch, Odessa, Tex., March 17.

T

Terrell, Barney, 39, scout, Stanolind Crude Oil Purchasing Co., Oklahoma City, Okla., February 7.

Thomas, Walter J., 46, driller, Montebello, Calif., August.

Thomas, W. L., 57, oil man, Huntington Beach, Calif., April 4.

Thompson, Beverly Tucker, 72, St. Petersburg, Fla., January 19.

Thompson, H. J., 55, engineer, Texas Co., Wichita Falls, Tex., November.

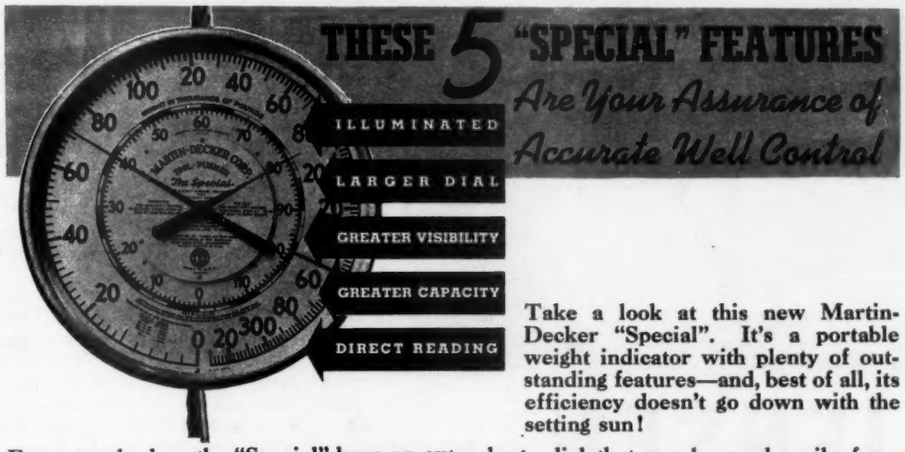
Thompson, John A., 60, director, Westbrook Thompson Oil Corp., Fort Worth, Tex., December.

Tillman, Carl R., refinery superintendent, Continental Oil Co., Casper, Wyo., November 30.

Trottnow, Alfred H., 52, treasurer, Braden Winch Co., Tulsa, Okla., April 3.

Troutman, George, drilling contractor, Jacksonville, Fla., April 2.

Turner, J., Paul, 53, Arkansas Fuel Oil Co., Shreveport, La., April 4.



Take a look at this new Martin-Decker "Special". It's a portable weight indicator with plenty of outstanding features—and, best of all, its efficiency doesn't go down with the setting sun!

For not only does the "Special" have an extra large dial that can be read easily from all parts of the rig, but built-in illumination lights up the entire surface of the dial face at night, making numerals and gauge hands just as readable at midnight as at noon. That means full 24-hour visibility, greater accuracy, and positive control over *all* jobs, whether it's drilling, pulling rods, or the most delicate of fishing jobs!

Besides day and night readability, the "Special" has other outstanding features, too. For example, the large dial face has etched numerals that give direct readings *both in pounds and in points* for any string-up and any standard line size . . . there are two gauge hands, one a supersensitive hand (six times as sensitive as the regular one) that provide vernier readings for all precision work . . . and the new *oversized* mechanism has sufficient capacity to handle loads on wells *deeper than any thus far drilled!*

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V

Van Schaick, Arthur P., vice president, American Chain & Cable Co., Southport, Conn., June.

W

Walker, Harold, 60, assistant to general counsel, Standard Oil Co. (New Jersey), Washington, D. C., July 7.

Wall, C. Frederick, president, Wall Rope Works, New York City, May 27.

Walsh, Joseph E., 51, oil operator, San Antonio, Tex., November.

Weaver, Nathan M., 79, driller, Eldorado, Kans., March.

Webster, Clay Johnson, 59, San Antonio, Tex., January 2.

Welch, Van. P., oil man, Artesia, N. M., October.

Berwald, P. M., oil producer, Bradford, Pa., October.

Welker, William S., 73, oil operator, Rouseville, Pa., March.

West, R. M., geologist, Hattiesburg, Miss., February 21.

Westcott, James Harry, 65, oil author, Larchmont, N. Y., May.

Whitehill, John P., 88, oil operator, Chelsea, Okla., January 27.

Whitney, George A., 75, retired staff correspondent, The Oil and Gas Journal, Toledo, Ohio, March 19.

Williams, D. C., president, Northern Oklahoma Gas Co., Ponca City, Okla., March 8.

Williams, Capt. Joseph Owen, 54, marine superintendent, Mene Grande Oil Co. (Gulf), Venezuela, August 14.

Williams, Reed Stephen, 48, South Penn Oil Co., Parkersburg, W. Va., April 15.

Winder, Boyd, 34, oil field worker, Saint Jo, Tex., February.

Winslow, Arthur, 77, president, Boston Petroleum Co., Boston, Mass., March 28.

Wise, Clarence R., 43, secretary manufacturing committee, Standard Oil Co., Summitt, N. J., January 21.

Wolfe, Frank E., 67, oil man, Tulsa, Okla., June 15.

Woodworth, James Earl, 55, East Texas Refining Co., Dallas, Tex., September.

Woodward, John, 83, driller, Oil Springs, Canada, August.

Worthingson, Stephen P., president, Tiona Petroleum Co., Fredericksburg, Va., October 26.

Wright, Gerden C., 47, chief clerk, Oklahoma Pipe Line Co., Tulsa, September.

Wright, Jesse C., 50, president, Wright Oil Tool Co., Bakersfield, Calif., February 2.

Wright, Roy R., 33, petroleum engineer, Fort Worth, Tex., February 4.

Wright, William, 70, retired vice president, International Supply Co., Tulsa, Okla., February 18.

Wyatt, W. J., 68, president, Wyatt Metal & Boiler Works, Dallas, Tex., August 26.

Wylie, Newton, 45, president, Capital Interests, Ltd., New York City, February.

X

Xavier, Norman, 54, assistant general manager, Texas Co., Shanghai, China, May 19.

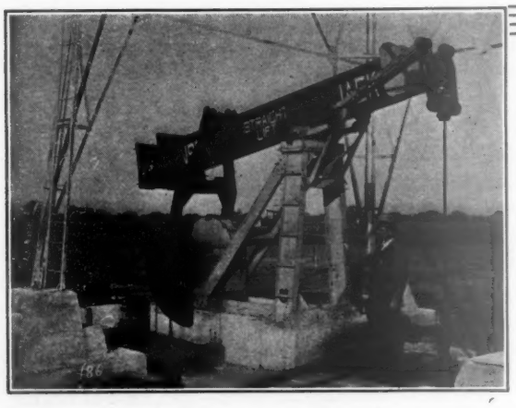
Y

Yeager, Lloyd I., 38, geologist, Trans-Western Oil Co., Wichita, Kans., July 13.

Young, W. Jennings, 42, president, Northern Oklahoma Gas Co., Ponca City, Okla., November 26.

Z

Zanzot, G. A., 55, treasurer, Universal Consolidated Oil Co., Los Angeles, July.



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Operations in Ontario in 1938 Sought Gas Reserves

As usual, drilling operations in southwestern Ontario were chiefly along the line of developing additional reserves for the large gas companies. A feature of the year's work was a systematic and widespread development program carried on by the Union Gas Co. which sought to extend its production in the Dawn, De Clute, Tilbury and Haldimand fields, in addition to wildcatting in the Malahide and Dunwich areas of Elgin County and the Delaware area in Middlesex County.

In Kent County, 13 wells were completed by the Union company in the old Tilbury field of which three were dusters and 10 producers with aggregate open flow of 3,450,000 feet of gas per day. In the newer De Clute field, the Union Gas Co. completed seven wells, of which five were producers aggregating 10,200,000 feet a day; while Gas Producers Syndicate No. 4 finished with 3,000,000 feet. In the Dover field, E. P. Rowe and associate interests finished one producer, estimated at 3,500,000 feet a day, and one dry hole.

In the Brownsville field, the largest individual completion was Central Pipe Line Co. No. 1 Annie Berdan, Lot 24, Concession 12, Dereham Township, with close to 12,000,000 feet a day. There were at least 19 completions with aggregate potential of 72,000,000 feet a day.

In the Haldimand field, the Union Gas Co. completed 14 shallow wells of which eight were producers, aggregating 483,000 feet a day. Three exploratory tests in the Dunwich area, five in the Malahide area, and one in the Delaware area, all failed to get commercial production.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—The second wildcat in two weeks was started near Arnett, Ellis County, western Oklahoma, and is scheduled to go to 5,000 feet. It is reported at least two other deep tests will be started in that area soon. Drilling has started on the townsite at Cement, Caddo County, with 76 of 102 townsite blocks being leased for drilling. A Kiowa County wildcat in Section 36-5n-18w, had a strong showing of gas in shallow sand but was drilling ahead toward Wilcox sand.

KANSAS—A well that may prove the connecting link between the Silica and Ellinwood pools in Barton County made a potential of 2,244 bbls. of oil. Barton County wildcats in Sections 3-18-14w and 14-19-15w were showing as probable pool openers. Topeka lime production was uncovered in the Ainsworth pool, Barton County, where other production is from Arbuckle lime. The North Fairfield pool was opened in Section 16-15-13w, Russell County. Extension producers were near completion in the Wilson pool, Cowley County; Buhler pool, Reno County, and South Sittner pool, Stafford County.

TEXAS—The Seminole pool in Gaines County was extended west and northwest. The Keystone pool in Winkler was extended a mile by Sid Richardson, who opened a pool in South Louisiana recorded last week. An 1,800-bbl. well extended the Foster pool in Ector County to the south. The Dunes pool in Crane County was advanced a half mile northwesterly. A new pool in Scurry County in Section 129-97, H.&T.C. Survey, was definitely proven. Holmes & Benton opened a pool in Montague County, 10 miles east of Nocona. The second test in the new Voth pool in Cooke County failed to find the pay section. In Houston County the Navarro Crossing pool was extended. An outpost to the Riverside gas field in Nueces County was showing oil on a drill stem test and may be a 4,000-foot extension to a pool in which distillate production was recently found. Two prospective shallow-pay fields were indicated in Live Oak and Duval counties, in the Mirando district. The recent discovery by Sid Richardson on the Eola prospect, Avoyelles Parish, Louisiana, throws open a large area for exploration on the Sparta-Wilcox trend in Texas and South Louisiana, and is regarded as the most important Gulf Coast discovery in several years.

LA-ARK-TEX—The most important wildcat of the week in the La-Ark-Tex division, in Lafayette County, Arkansas, was drilled into salt water. A 655-bbl. distillate well was completed in the Bodcaw sand in Cotton Valley on the west edge of the Cotton Valley field.

NEW MEXICO—A second oil well was near completion in the new Lovington area, offsetting the gas discovery well in the district, and 2 miles south of the oil discovery. A second gas well offsetting the new oil producer also was at completion stage.

ILLINOIS—Hope of developing a large Devonian (Niagaran) lime field in Marion County was dimmed when sulfur water was developed in a test in the Sandoval field.

MICHIGAN—Prospective fields loom in Wise Township (16n-3w), Isabella County, and in Tallmadge Township (7n-13w), Ottawa County.

Completions in All Fields

(Week Ending January 21, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	31	12	4	47	233	384
Ohio	2	5	8	15	66	82
Indiana	0	0	0	0	10	6
Kentucky	4	2	6	12	44	43
Illinois	58	0	8	66	290	43
Michigan	8	1	7	16	69	47
Kansas	13	2	7	22	68	158
Oklahoma	16	2	15	33	107	125
Texas:						
North Central Texas	19	0	16	35	121	160
West Texas	25	0	1	26	115	184
Texas Panhandle	3	0	0	3	22	66
East Texas	22	0	0	22	64	188
East Central Texas	1	0	1	2	20	37
East Texas Border	2	0	0	2	4	12
Gulf Coast Texas	24	1	2	27	85	91
Southwest Texas	38	1	5	44	134	135
Total Texas	134	2	25	161	565	873
North Louisiana	7	1	1	9	33	49
Gulf Coast Louisiana	5	0	3	8	44	37
Total Louisiana	12	1	4	17	77	86
Arkansas	8	0	2	10	26	20
Montana	1	0	0	1	8	4
Wyoming	1	0	0	1	5	15
Colorado	0	0	0	0	1	.0
New Mexico	10	0	0	10	45	48
Utah	0	0	0	0	0	0
California	16	0	2	18	61	94
Total United States	314	27	88	429	1,675	2,028
Total previous week	293	33	85	411		
Week ending Jan. 22, 1938	400	53	111	564		

Outstanding Fields--Highlights

(Week Ending January 21, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	33	38	6	10,585	906	21,256
Wasson-Bennett	5	33	3	2,809	197	11,128
Ector County	9	63	9	8,033	1,420	43,046
Winkler County	2	15	1	482	1,742	36,300
Howard-Glasscock	6	13	1	1,032	1,037	15,550
East Texas	20	37	22	1,131	25,914	372,198
OKLAHOMA						
St. Louis	7	31	8	1,560	766	23,750
Oklahoma	0	7	0	0	1,086	103,525
KANSAS						
Barton County	3	18	1	733	399	12,615
Stafford County	8	21	3	485	229	5,495
Rice County	2	13	2	887	1,264	31,860
Russell County	4	22	4	1,947	1,186	21,485
NEW MEXICO						
Lea County	6	64	9	824	2,009	91,280
LA-ARK-TEX						
Rodessa, La-Ark-Tex	2	9	3	1,180	1,059	62,370
Cotton Valley, La. (deep)	1	15	1	495	111	10,740
Schuler, Ark	3	7	7	3,495	143	18,100
Jennings, La.	2	9	2	425	134	25,865
MICHIGAN						
Freeman-Redding	5	23	1	700	49	9,674
ILLINOIS						
Central Illinois	55	393	59	16,607	2,296	132,460
CALIFORNIA						
Wilmington	4	8	2	998	593	83,100
KENTUCKY						
Birk City	3	14	0	0	112	4,796

Illinois and Kentucky

By STAFF CORRESPONDENT

Sulfur Water Developed in Max Pray Test in Sandoval

CENTRALIA, Ill., Jan. 23.—Fifty-nine oil wells, eight dry holes and no gas wells, or 67 completions in all, formed the record of the past week's results in the Illinois fields. The completions were all in the basin area. Marion County had 34 completions including 31 oil wells with a total initial production of 1,785 bbls.; and three dry holes in wildcat areas. Fayette County reported 22 completions, of which 20 were oil wells with a total of 3,683 bbls. in new production, and two dry holes. Clay County had six oil wells that produced 1,834 bbls. initially and no failures, and St. Clair County reported a 75-bbl. shallow well. A dry hole each in Randolph, Effingham and Cumberland County completed the list.

Max Pray's Devonian lime test in the Sandoval district in Marion County developed sulfur water when the plug was drilled. Twenty-four feet of saturated Niagara lime had been cored from 3,051 to 3,075 feet and a Schlumberger test did not show water. Casing was set and when the plug was drilled the sulfur water appeared. Had this well developed production like that found in the Devonian discovery well drilled a few weeks ago by Southwest Oil & Gas Co. on the Benoist farm in the Sandoval field it would have started a lively campaign of operations. Now, drilling plans have been held up until it is finally demonstrated that the Pray well is a failure or a producer.

Production in the past week in the basin fields averaged 132,460 bbls. per day and in the old fields 7,615 bbls. per day, a total for the state of 140,075 bbls. a day, a new high record.

Completions of the week follow, the initial production representing 24 hours unless otherwise stated:

Fayette County

In Fayette County, Magnolia Petroleum Co. No. 6 Della Rhodes, NE NE NW Section 34-8n-3e, Louden field, Bethel sand at 1,594-1,601 feet, swabbed 48 bbls. Carter Oil Co. No. 2 E. Sherman, NE NW NW Section 29-8n-3e, Weiler sand at 1,540-62 feet, shot with 50 quarts, pumped 30 bbls. Carter Oil Co. No. 1 Charity McClain, NW SW SE Section 32-8n-3e, Bethel sand at 1,548-79 feet, shot with 60 quarts, flowed 183 bbls. in four hours and rated as a 940-bbl. well. The Texas Co. No. 1 Wantland, NW cor. NE NW SE Section 31-7n 3e, Weiler at 1,551-83 feet, pumped 116 bbls. Shell Petroleum Corp. No. 4 Fulton, SE SW NE Section 29-7n-3e, Weiler at 1,544-88 feet, shot with 21 quarts, swabbed 25 bbls. in five hours, then pumped 100 bbls. in 24 hours. Mudge Oil Co. No. 3 Devor, NE cor. SE Section 1-7n-2e, Weiler at 1,478-96 feet, shot with 20 quarts, pumped 50 bbls. Carter Oil Co. No. 5 N. M. Hopper, NW NE SW Section 5-7n-3e, Bethel sand at 1,553-68 feet, shot with 30 quarts, flowed 480 bbls. of oil and 100,000 feet of gas. Sherman and others No. 4 Sefton, SE cor. Section 1-7n-3e, Weiler at 1,532-69 feet, shot with 40 quarts, pumped 200 bbls. Carter No. 1 M. Kistler, NE cor. SW SW Section 6-7n-3e, Weiler at 1,430-81 feet, shot with 50 quarts, swabbed and flowed 400 bbls. Carter No. 3 A. McClain, NW NE NE Section 5-7n-3e, Bethel at 1,572-90 feet, shot with 20 quarts, flowed 114 bbls. Carter No. 2 F. Quade, SE NE SW Section 6-7n-3e, Weiler at 1,474-1,510 feet, shot with 30 quarts, flowed 160 bbls. Central States Oil Co. No. 3 McKenzie, NE SW SE Section 20-7n-3e, Weiler at 1,560-90 feet, shot with 30 quarts, pumped 124 bbls. Carter No. 1 L. Hackert, SE NE SW Section 20-7n-3e, Weiler at 1,524-70 feet, shot with 60 quarts, swabbed 616 bbls. Carter No. 2 M. Hoar, NE NE SE Section 9-7n-3e, stray sand at 1,551-73 feet, shot with 10 quarts, swabbed 18 bbls. of oil and 47 bbls. of water. Carter No. 1 J. Durbin, SW SW NW Section 9-7n-3e, shot with 20 quarts at 1,515-21 feet, pumped 35 bbls. the first day and 7 bbls. the second. Union Products Co. No. 4 Arnold, SE NW SW Section 8-7n-3e, Weiler at 1,428-40 feet, pumped 75 bbls. Sol Simon and others No. 2 Owens, SE cor. NW NW Section 8-7n-2e, Benoist at 1,510-34 feet, shot with 50 quarts, pumped 400 bbls.

Illinois Fields

HIGHLIGHTS OF THE WEEK: Illinois made another production peak in the past week. The Max Pray test for production in the Devonian (Niagaran) in the Sandoval field in Marion County was showing sulfur water in the pay horizon.

Daily production of new pools, 132,460 bbls.; old pools, 7,615 bbls.; total, 140,075 bbls.

Completed oil wells, 58; field operations, including locations, rigs and wells drilling, 484.

Good McClosky Lime Showing in Muhlenberg County Test

OWENSBORO, Ky., Jan. 23.—Oil men are looking beyond the Birk City area for a continuance of the interest that has been taken in the western Kentucky fields in the last few months. Birk City passed another week during which no oil wells were completed. Two dry holes and a gas well constituted the crop of completions there.

A good showing in the McClosky lime in Muhlenberg County had not been tested but when the well is completed it may cause a revival of interest.

The Spottsville pool in Henderson County is also being looked to to bring the Owensboro area again into prominence. Sale & Ralston No. 1 Annie Stewart, 40 acres, in the Spottsville area, is drilling below 1,700 feet and was due for completion in the McClosky this week. Fitzpatrick & Hayes test on the Cooksey lease a half-mile west of Spottsville, was in the McClosky formation and due for completion at any time.

Following is a record of the past week's completions and new operations:

Butler County, South Hill district: W. E. Allison No. 2 Warren & Pendley, moving in.

Daviess County, Utica district: W. E. Hupp and others No. 1 J. B. Baird, dry hole, total depth 1,681 feet; H. C. Farmer and others No. 1 Jim Brown, 15 bbls., Jackson sand, total depth 1,384 feet; O. D. Vickers and others No. 3 William Johnson, location; Master Oil Co. No. 2 E. W. Richmond, swabbing 35 bbls. from 16 feet of Jett sand, total depth 1,191 feet. Birk City district: Major Oil Co. No. 1 Coy & Smith, location; J. A. Barrett and others No. 1 Jones Heirs, abandoned at 300 feet; Aetna Oil Service Corp. No. 3 Henry Miller, spudding in; Ky.-Mo. Oil Co. No. 1 Pittman, building rig; Combs & Jenkins No. 1 E. L. Robinson, dry hole, total depth 1,933 feet; Major Oil Co. No. 1 Howart West and others, location.

Hancock County, Patesville district: Tracy Supply Co. No. 2 W. C. Smith, old well drilling deeper.

Henderson County, Birk City district: W. E. Hupp and others No. 4 O. L. Boswell, 2,500,000 cu. ft. of gas from Jett sand, total depth 1,229 feet; Carpenter & Frelison No. 2 Francis Dempewolf, location; J. C. Miller, trustee, No. 2 O. W. Rash Heirs, dry hole, total depth 1,954 feet. Horse Shoe Bend district, south of Evansville: A. A. Douglass and others No. 1 A. B. and H. Mann, abandoned location; A. A. Douglass and others No. 1 A. E. Rankin, dry hole, total depth 2,471 feet.

McLean County, South Livermore district: Walter Daly and others No. 6 D. and S. Butterfield, spudding in. East Livermore district: W. K. Snyder and others No. 1 Lloyd & Jackson, an old gas well, drilling deeper.

Muhlenburg County, Belton district: Fred Phillips Oil Co. No. 1 Clarence Boggess, drilled top of McClosky, total depth 1,541 feet. Well filled with oil and ran over top of casing before being shut in. It had not been tested, but apparently will make a good well.

Ohio County, Fordsville district: Earnest Porter and others No. 3 Isaac Fendley, dry hole through Jones sand. Westerfield district: H. Ogle and others No. 1 T. E. McQuary, 40 acres, moving in.

Union County, Uniontown district: Brauer & Daniels No. 1 Pollard, location.

Webster County, 5½ miles south of Clay: Dean Schendal and others No. 1 A. B. Vaughn, moving in.

EASTERN KENTUCKY OPERATIONS

ASHLAND, Ky., Jan. 19.—One oil well, a reported production of a completed gas well and a completed repressuring well is included in the week's report of operations in the eastern Kentucky area. Activities continue on the light side but one firm is planning to start operations at two new locations soon, and it is believed that early spring will see a general pickup in this section.

Inland Gas Corp. has location for No. 206, Zada Hutcherson farm, on the Right Fork of Troublesome Creek in Knott County as well as location for No. 207 on the Curtis Pigman land, also on the Right Fork of Troublesome Creek, same county. Officials of the company said operations would probably start within two weeks.

Kentucky West Virginia Gas Co. reports completion of No. 574 on the John and Benjamin Sellards farm on Coldwater Fork in Martin County. The well reached a total depth of 2,753 feet in shale and is making 227,000 cu. ft. of gas daily.

A well for repressuring has just been completed on the line between the C. C. Meade and Mary B. Ferguson farms in the Wheelersburg district of Magoffin County. It was drilled by Browning Brothers. George Collins recently finished cleaning out No. 1 on the Rosa Adams farm in the same district.

Eli Sparks, Less Weathers, and others, have completed No. 1 on the Park Vanderpool land at Pilot in the South Fork district of Powell County. It is producing

(Continued on Page 225)

Carter Oil Co. No. 4 L. Ripley, SW NW NW Section 29-7n-3e, Weller at 1,538-60 feet, shot with 40 quarts, swabbed 284 bbls. Minerva Oil Co. No. 2 Morris, NE SW NW Section 21-7n-3e, Weller at 1,547-85 feet, pumped 150 bbls. Williams and others No. 7 Smith, SE SW NE Section 20-7n-3e, Weller at 1,548-73 feet, pumped 100 bbls. R. J. Reink No. 1 Pummell, SE SE SW Section 8-7n-1e, a wildcat, dry and abandoned at 1,900 feet. Fredonia lime was topped at 1,783 feet.

In Fayette County, Union Products Co. No. 1 F. Mahon, NE NE SE Section 8-5n-3e, a wildcat, was dry and abandoned at 1,827 feet. Cypress sand was penetrated at 1,752-67 feet, and a water sand at 1,780-82 feet.

Marion County

In Marion County, Salem field, the Texas Co. No. 5 McCollum, NE NW NE Section 32-2n-2e, Benoist sand at 1,690-1,745 feet, flowed 259 bbls. Oil Royalties Co. No. 1 Suggs, Meeker, SW cor. NW NW NW Section 11-2n-1e, in the Centralia district, dry and abandoned at 1,745 feet. In the Salem field, Kingwood Oil Co. No. 11 Shanafelt A, SW cor. NE NE Section 20-2n-2e, Fredonia lime top at 1,913 feet, pays at intervals from 1,918 to 2,004 feet, casing perforated at 1,922-2,002 feet, flowed 1,335 bbls. in 10 hours or at the rate of 3,204 bbls. per day, one of the best flush showings yet found in the Basin fields. Texas No. 3 Martin, SW SE SE Section 17-2n-2e, Benoist at 1,792-1,830 feet, pumped 130 bbls. Ohio Oil Co. No. 9 M. Young heirs, SE NE SE Section 17-2n-2e, Benoist at 1,857-80 feet, pumped 95 bbls. Texas No. 1 A. Shanafelt, SE SW NW Section 16-2n-2e, McClosky pay at 2,906-2,108 feet, flowed 240 bbls. Magnolia Petroleum Co. No. 12 W. O. Chitwood, SW cor. NE SW NE Section 16-2n-2e, total depth 1,876 feet, plugged back to 1,804 feet and drilled out to 1,855 feet, swabbed 96 bbls. Sievka & Frazier No. 1 Lee, NE cor. SW NE SW Section 2-2n-2e, Benoist at 1,780-1,834 feet, shot with 40 quarts at 1,791-1,816 feet, flowed 740 bbls. Ohio Oil Co. No. 2 A. E. Loyd, NW NW SE Section 28-2n-2e, Benoist at 1,812-49 feet, pumped 94 bbls. Magnolia No. 23 W. O. Chitwood, NE NE SW Section 28-2n-2e, Bethel sand at 1,769-1,808 feet, shot with 40 quarts, flowed 480 bbls. Haynes & Thomas No. 1 Lee, NW NW SE Section 28-2n-2e, Benoist at 1,772-1,813 feet, shot with 40 quarts on bottom, flowed 960 bbls. Magnolia No. 13 W. B. Young, NE cor. SW NE Section 20-2n-2e, McClosky lime pay at 1,910-95 feet, flowed 720 bbls. Texas No. 5 J. Friesner, SE NE NW Section 32-2n-2e, Benoist at 1,660-1,712 feet, flowed 777 bbls. Texas No. 4 Lee, NE SE SW Section 28-2n-2e, Benoist at 1,761-1,808 feet, flowed 140 bbls. Texas No. 7 Chapman, SE cor. SW NE SW Section 28-2n-2e, Benoist at 1,779-1,828 feet, shot with 40 quarts, flowed 280 bbls. Texas No. 1 Parker, SW cor. SE NE Section 33-2n-2e, Benoist at 1,870-1,912 feet, pumped 243 bbls. Texas No. 5 Easley, SE SW NE Section 33-2n-2e, Benoist at 1,854-96 feet, shot with 20 quarts, flowed 288 bbls. through 1-inch choke.

In the Centralia field Broadus and others No. 1 Whitechurch, NE cor. SE NE Section 12-1n-1e, dry and abandoned at 1,912 feet. Hensky and others No. 1 C, Yoos, CNL SW Section 6-1n-1e, abandoned after drilling a water sand at 1,169-70 feet.

Texas Co. No. 2 W. Frederick B, SE cor. NE NE Section 8-1n-2e (corrected location), Benoist at 1,820-54 feet, flowed 250 bbls. H. B. Lee No. 1 City of Centralia, SW cor. SE Section 4-1n-2e, Benoist at 1,861-70 feet, pumped 350 bbls. Mammoth Producing & Refining Co. No. 8 Bachman, C S half NE SW Section 9-1n-2e, Roseclaire at 2,030 feet, pay at 2,100-25 pumped 10 bbls. Texas Co. No. 8 City of Centralia land, NW NE NW Section 9-1n-2e, Fredonia lime at 2,020 feet, pay at 2,065-75 feet, flowed 581 bbls.

In Marion County Texas Co. No. 5 W. Frederick, NW cor. SW NW Section 9-1n-2e, McClosky at 2,056-63 feet, acidized with 2,000 gallons, flowed 580 bbls. Rockhill No. 12 Foster, NE SE SE Section 7-1n-2e, Aux Vases at 1,873 feet, total depth 1,911 feet, flowed 398 bbls. in 24 hours through open casing. Texas Co. No. 1 M. A. Tate, SE SW NE Section 7-1n-2e, Benoist at 1,748-69 feet, pumped 45 bbls. Texas No. 2 C. E. Bundy, NW cor. NE NW NE Section 6-1n-2e, Benoist at 1,751-69 feet, flowed 315 bbls. Texas No. 9 Kalkbrenner, SE cor. NW SE SW Section 5-1n-2e, Benoist at 1,748-96 feet, pumped 175 bbls. Texas No. 8 Kalkbrenner, NE cor. SE SW Section 5-1n-2e, Benoist 1,735-88 feet, flowed 210 bbls. Texas No. 6 V. Kalkbrenner, NE SE SW Section 5-1n-2e, Benoist at 1,742-92 feet, flowed 196 bbls. Texas Co. No. 6 O. Johnson, SE cor. NE SW Section 5-1n-2e, Benoist at 1,743-84 feet, flowed 287 bbls. Texas Co. No. 2 Hawthorne, SW cor. NW SW SE Section 5-1n-2e, McClosky pay at 1,959-65 feet, acidized with 2,000 gallons, flowed 36 bbls. in three hours. Roberts Brothers No. 5 Pittenger, N half NW NE NE Section 5-1n-2e, Benoist at 1,750-1,800 feet, pumped 75 bbls. Frontier Oil Co. No. 1 Antioch school land, SW cor. NW SW SE Section 5-1n-2e, McClosky at 1,929 feet, total depth 1,983 feet, flowed 400 bbls. in six hours.

In Wayne County H. H. Weinert No. 1 Muhlbach, C S half NW SW Section 34-1s-7e, Roseclaire at 3,200 feet, pay at 3,259-65 feet, flowed 230 bbls. in five hours.

In Jefferson County Carter Oil Co. No. 1 L. K. Miller, NE NE NW Section 9-1s-2e, Bethel sand at 1,933-40 feet, shot with 15 quarts, pumped 148 bbls.

In Randolph County Cain and others No. 1 Smiley, SW cor. SE SE NE Section 31-4s-5w, topped St. Louis lime at 1,207 feet and was abandoned as dry at 1,251 feet.

In Clay County Schlafly & Dameron No. 2 Nash, NW NE NE Section 13-3n-6e, McClosky pay at 2,947-52 feet, acidized with 7,550 gallons, pumped 25 bbls. Same operators' No. 3 Nash, SW NW NE Section 13-3n-6e, had McClosky pay at 2,967½-73 feet, acidized with 6,500 gallons, pumped 125 bbls. Pure Oil Co. No. 4 Daisy Bunn B, C E half NE SE Section 16-2n-8e, pays at intervals from 3,002 to 3,070 feet, flowed 262 bbls. Pure No. 1 B. B. Moseley, C W half NE NE Section 9-2n-8e, pay at intervals from 2,980 to 3,083 feet, acidized with 1,113 gallons, swabbed 18 bbls. in nine and one-half hours; then reacidized with 4,890 gallons, pumped 124 bbls. in 24 hours. Pure No. 2 Routt Consolidated, C E half SW SW Section 10-2n-8e, pays and shows at 3,003-67 feet, acidized with 5,000 gallons, flowed 404 bbls.

In Clay County Pure Oil Co. No. 1 Brown Consolidated, C W half NE SE Section 22-1n-7e, pay at 3,125-37 feet, flowed 894 bbls. through perforations at 3,120-32 feet.

In Effingham County H. Gussman No. 1 W. Wagner, NE NE SE Section 13-7n-5e, a wildcat, was dry and abandoned at 2,690 feet. St. Louis limestone was topped at 2,544 feet. No showings were reported at any level.

In Cumberland County D. J. Marshall No. 1 Baker, NE NE SW Section 7-9n-9e, dry and abandoned at 2,485 feet. McClosky lime was topped at 2,390 feet.

(Continued on Page 232)

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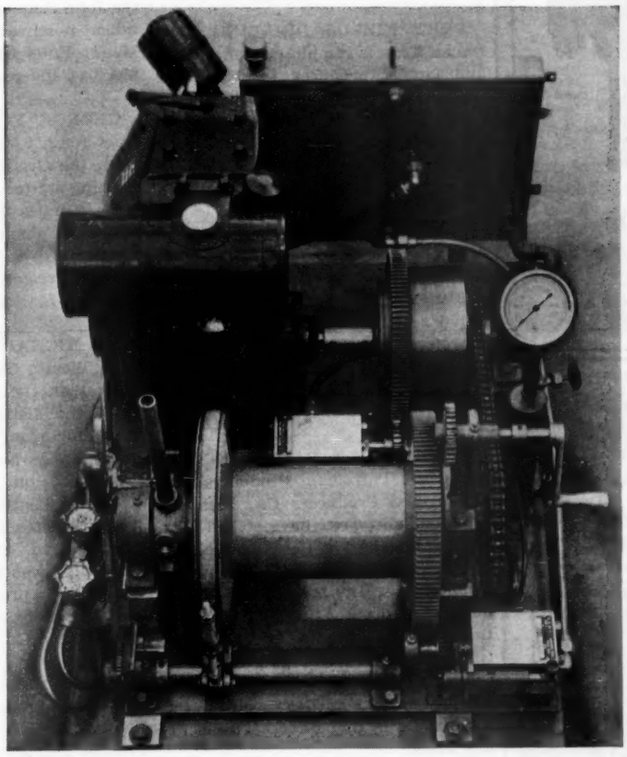

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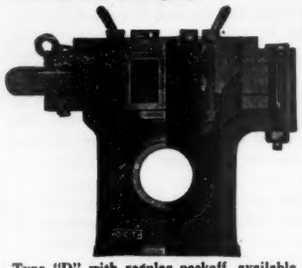

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Among the Drilling

McQUEEN & CLEVENGER DRILLING CO., Fort Worth, Tex., has started two new wells for Gulf Oil Corp. on the Goldsmith lands in Ector County, West Texas. No. 159 Goldsmith is the most western test to the southern portion of the Goldsmith pool. It is in Section 21, Block 44, T.&P. Survey. The other is No. 154 Goldsmith, located in Section 15, Block 44, T.&P. Survey.

BERT FIELDS DRILLING CO., Dallas, Tex., is completing the fourth and largest producer for the new Griffin pool, just outside of the town of Avoca in Jones County, West Central Texas. The well is No. 1 J. T. Taylor and a flow of 84 bbls. of oil per hour for three hours was reported before operators shut it in to await official gauge. Production is from the Palo Pinto lime from 3,208-33 feet and the well is an east offset to Humble and Iron Mountain No. 1 Taylor, a 1,440-bbl. producer. The operator has skidded the rig south to the B. C. Humphrey lease and is starting a southwest diagonal offset to the discovery well in the area.

HELMERICH & PAYNE, INC., of Tulsa, and Petroleum Producers Co. and United Producers Co., both of Wichita Falls, Tex., have staked No. 1 J. N. Shepard in the Abner Nails Survey of northern Archer County, North Texas. The test will seek the heretofore prolific Strawn sands of the Hull-Silk pool, just south of the test. Because of the large production found to the north of the Hull-Silk pool, development has been much more rapid in that direction than in any other.

L. T. (BOBBY) BURNS, drilling contractor of Wichita Falls, Tex., has staked a new 5,500-foot rotary wildcat test in central Clay County, North Texas. The wildcat will be No. 1 A. L. Browning and others, Block 94, J. H. Belcher Subdivision, about 6 miles southwest of Blue Grove. The test is on a block of 2,000 acres and will seek the deep pay tapped several times throughout the area but never having yielded commercial production.

ROSS DRILLING CO., Wichita Falls, Tex., has received contract from Phillips Petroleum Co. for deepening an old dry hole in northern Archer County. The test was abandoned by Burk Royalty Co. at a depth of 4,006 feet last year. It is No. 1 J. B. Miller, Lot 4, Block 20, A.T.N.C.L. Survey, about 2⅛ miles southwest of the Hull-Silk pool. The deepening will be carried to 4,500 feet unless commercial production is encountered before.

HARRIS DRILLING CO., Henderson, Tex., has been awarded contract for drilling a 4,000-foot wildcat test in the Mount Enterprise area of Rusk County, East Texas. The test will be O. L. Ham, R. A. Boggess and W. E. Wylie No. 1 Ash Griffin, in the John Randolph Survey, about 3½ miles northwest of the town of Mount Enterprise. Location is on a block of approximately 8,000 acres.

GEORGE ECHOLS received contract for a 6,000-foot Frio sand test from the Grisso Royalty Co., which is being started on the Amelia Smith lease, 2 miles west of Arcola in the Moses Shipman Survey, Fort Bend County, Texas. In the League City field, Galveston, two operations are reported for himself.

SID RICHARDSON, contractor of Fort Worth, Tex., drilled his first wildcat on the Gulf Coast and provided the district with one of the most important discoveries in several years as his No. 1 Haas Investment Co., on the Eola prospect, Avoyelles Parish, coastal Louisiana, was completed as a producer in the Wilcox sand. The completion provides an incentive for a large-scale wildcatting program through the northern tier of counties and parishes in the Gulf Coast.

GLENN H. McCARTHY has three rigs running in the League City field, Galveston County, Texas, for Phillips Petroleum Co. No. 1 Patton, northeast of production, is drilling below the producing horizon at 10,-028 feet, while two other tests are nearing the 9,000-foot pay.

HOUSH & THOMPSON are starting an interesting test at the Eureka field, Harris County, Texas, with the spudding of No. 1 W. T. Helberg, the most northeasterly well drilled in the field, and only a short distance from the Houston city limits. In the Fairbanks field their No. 2 Yerkes has cored the sand and casing is being cemented for completion.

TRINITY DRILLERS, Inc., recompleted Lewis Production Co. No. 2 Drushel at a total depth of 2,712 feet, and have one rig running for the same company on the Salyers lease. In Brooks County, Texas, the Southern Minerals Corp. No. 1 Proctor, a wildcat, is drilling below 6,773 feet. In the East Premont field one

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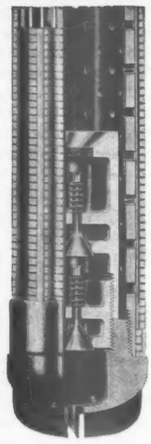

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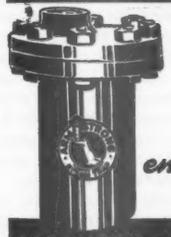

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Contractors

rig is operating for Transwestern Oil Co. while in Webb County Superior Oil Co. No. 1 Laurel has been spudded.

CARL B. KING of Oklahoma City is drilling below 3,700 feet in an important wildcat in Ouachita County, South Arkansas. The well, Deep Rock Oil Corp. No. 1 C. Wesson, NE Section 23-15-19, will be watched with interest by Arkansas operators.

W. G. RAY DRILLING CO. of Shreveport, La., last week completed one of the best Bodcaw sand wells in Cotton Valley to date. The well, North American Consolidated Oil Co. No. 4 Stewart-Coyle, is of added importance in that not only is it a large distillate producer, but, located on the west edge of the field, it encountered the Bodcaw section much higher than expected, thus showing a distinct flattening of the Cotton Valley structure on the west.

RED IRON DRILLING CO. recently extended the Shreveport field of Caddo Parish, Louisiana, 1 mile south. The extension producer was drilled as W. C. Feazel No. 1 Hughes, located across Cross Lake from the original wells of the field.

TABOR & COLEMAN, Tulsa, have staked location for No. 1 Smith, in NW SE Section 33-7-5e, at the southeast edge of the St. Louis pool of Pottawatomie County, Oklahoma. It is on a farm-out from the Shell Petroleum Corp.

JONES & DICKENS, contractors, have drilled in a test for Denman Brothers of Sedan on the Scott lease west of Sedan, in Township 33s-11e, Chautauqua County, Kansas. Oil was found near the 1,400-foot level. A test has not been made of production.

CLAUDE WENTWORTH, president of the Wentworth Drilling Co., Tulsa, has taken charge of the completion of the Herbert Gussman and others No. 1 Wagner, in NE SE Section 13-7n-5e, southwest of Effingham, Ill.

HUGHES DRILLING CO. is drilling below 5,235 feet at No. 1 Misener, NE NW Section 10-20n-4w, Garfield County, Oklahoma.

BIG CHIEF DRILLING CO. No. 2 Canfield, in SW Section 33-7-5e, St. Louis, Oklahoma, area, pumped 410 bbls. of oil and 160 bbls. of water in 24 hours after acidizing with 3,000 gallons at a total depth of 4,173 feet. The Viola lime was topped at 4,040 feet, the Dense at 4,110 feet, and the dolomite at 4,155 feet.

BROADVIEW DRILLING CO., Wichita, Kans., has rigged up cable tools for No. 1 Beardmore, a wildcat, in NW SE SW Section 2-9-16w, three-quarters of a mile north of production in the Laton pool of Rooks County, Kansas. The well is being drilled in partnership with George Seidhoff, Wichita.

JOHNSON-KEMNITZ DRILLING Co., Oklahoma City, has staked location for No. 1 Green, in NW SE Section 2-6-4e, in the St. Louis district of Pottawatomie County, Oklahoma, near the mission town of Sacred Heart at the southeast end of the pool. The rig is up.

OSAGE DRILLING CO., Oklahoma City, and others completed No. 1 Tippett, in Section 266, Block G, of W. T. Survey, in the Seminole pool of Gaines County, Texas, at 5,139 feet, which flowed at an estimated rate of 100 to 200 bbls. a day naturally through tubing. It will be acidized.

J. E. SIEGFRIED, Tulsa, and associates' No. 1 J. Claiborne Mitchell, in SW cor. SE Section 2-19-14e, just west of Lynn Lane, some 11 miles due east of Tulsa, is the discovery well of the new Lynn Lane gas pool; operators are confident that deeper drilling will uncover the rich Burgess gas sand. A very hard lime cap was found at 1,158 to 1,178 feet, followed by a sand at 1,178 to 1,196½ feet.

COMET DRILLING CO. is drilling below 2,195 feet at No. 1 Tarby, NW NE Section 17-1-2e, in the Davis-Wynnewood area of Murray County, Oklahoma.

PIONEER DRILLING CO., Tulsa, completed No. 3 Billington, NE SW Section 36-7n-4e, Pottawatomie County Oklahoma. The dolomite was topped at 4,235 feet. The well was acidized with 4,000 gallons. Total depth is 4,275 feet; the well made 500 bbls.

CASEY DRILLING CO. is drilling below 1,438 feet at No. 1 Pace, SW SW NE Section 14-2-7, Pontotoc County, Oklahoma.

H. & M. DRILLING CO. completed No. 2 Wiggins in NW NE Section 36-19s-2w, McPherson County, Kans., at a total depth of 2,981 ft., which made 267 bbls. when tested.

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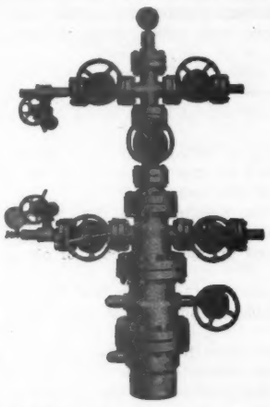

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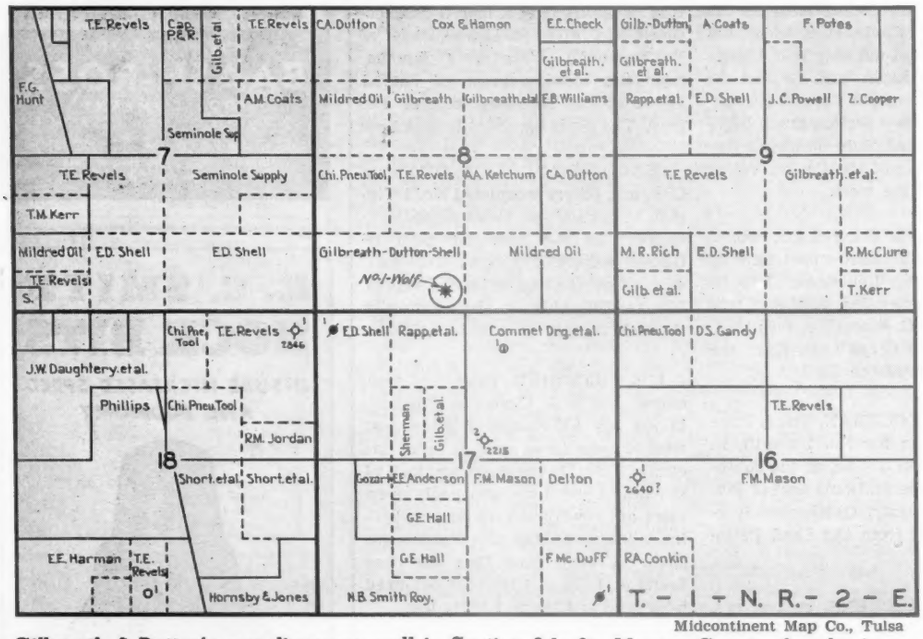
By
DAL DALRYMPLE

Second Deep Wildcat Starts Near Arnett in Ellis County

The Arnett area in Ellis County, western Oklahoma, is proving attractive to the wildcatters, a second deep test for the district being announced the past week. It was Enterprise Drilling Co. No. 1 Wahl, C NW NW Section 1-19-25w, about 3 miles northwest of Arnett. The first of two tests planned by the company, it is scheduled to go to 5,000 feet. Operators were reported rigging up tools. Location is on acreage acquired by the Enterprise company from J. E. Elliott, who assembled a 200,000-acre block.

The previous week location was announced for J. E. Elliott No. 1 Teton, SE NE Section 35-20-25w, northwest of the No. 1 Wahl. Derrick equipment is on the ground and work was due to start soon. J. B. Gregory, Houston, Tex., operator, was reported to have obtained a 1,000-acre spread from Mr. Elliott, below 450 feet, headed for Wilcox sand. Location is on a 9,000-acre lease block. The test originally was started by Mrs. H. M. Crawford and Mrs. M. K. Zeliff, who turned the deal to Mr. Hagerling and associates.



Midcontinent Map Co., Tulsa

Gilbreath & Dutton's gas discovery well in Section 8-1n-2e, Murray County, has been averaging 30 bbls. of oil daily with the gas inrecent weeks, indicating the opening of the first oil pool for that county

near Arnett townsite, and also is leasing on the townsite, with agreement to start a deep test in the near future.

Work was started at a new wildcat in the southern Seminole district at Pearson and others No. 1 Dies, NW NW SE Section 2-5n-5e. This is an area surrounded by production within a radius of 3 to 4 miles. It is on a block of about 500 acres and on a small structure thought to have productive possibilities in several horizons.

Townsite drilling was getting under way at Cement, in Caddo County. York-Kan Oils, Inc., No. 1 Townsite, in Block 42, was due to spud for a deep test. Seventy-six of the 102 blocks on the townsite have been leased for drilling by York-Kan and others, Oscar Grace and associates, Cox & Hamon, Charles E. Carter, W. H. Clements, English Drilling Co. and the Colcord estate.

Charles J. Hagerling and others No. 1 Kimray, SW SW NW Section 36-5n-18w, wildcat near Roosevelt in Kiowa County, topped gray lime conglomerate at 351 feet and had a strong show of gas through water while drilling at 385 feet. Crews had to fill the 10-inch hole to prevent a blowout. Operators were drilling ahead

Indian Territory Illuminating Oil Co. No. 1 Palmer, NE SE NW Section 5-10-9, was location for a wildcat north of the Olympic field in Okfuskee County.

Conley Drilling Co. No. 1 Duperou, NE NE NW Section 18-6-5, wildcat between the St. Louis and Gray pools in southern Pottawatomie County, had dug cellar and pits.

Grimes and others No. 1 Dye, NW NW SE Section 2-5-5, wildcat in southwestern Seminole County, was rigging up.

Amon G. Carter, Fort Worth publisher, has started a wildcat in Murray County, south of Davis, at No. 1 Vinsonite, NW NE SE Section 34-1s-2e. It was reported he will test the Simpson formation.

Pottawatomie County

Recent completions in Pottawatomie County included Hall & Briscoe, Inc., No. 4 Coleman, NW cor. Section 33-7-5, St. Louis area, good for 632 bbls. of oil daily after acidizing. Dolomite was topped at 4,085 feet, total depth 4,100 feet.

Westheimer and others No. 1 Everett, SE SW NW Section 32-7-5, found dolomite at 4,097 feet, was bottomed at 4,129 feet, acidized and produced 140 bbls. of oil daily.

Alma Oil Co. No. 6 Smith, NE SW NE Section 32-7-5, produced 200 bbls. of oil daily after acidizing. Top of dolomite was 4,020 feet, total depth 4,069 feet.

Same company's No. 1 E. Rhodd, NW NW SE Section 32-7-5, had dolomite at 4,042 feet, total depth 4,067 feet, was treated with 3,000 gallons of acid and produced 360 bbls. of oil daily, initially.

Robertson and others No. 2 Johnson, NE NE SW Section 29-7-5, entered dolomite at 4,010 feet, total depth 4,100 feet, acidized, and had initial daily yield of 180 bbls.

Denver Producing & Refining Co. No. 2 Zoeller A, NW NE SE Section 5-6-5, was completed for 100 bbls. of oil daily at 4,337 feet, total depth.

Kerlyn Oil Co. No. 1 Sullivan, SW SW SE Section 26-7-3, acidized Viola lime topped at 4,190 feet, total depth 4,222 feet, and produced 150 bbls. of oil in 24 hours.

Vivian Oil Co. No. 1 LeClare, NW NW NE Section 23-7-4, pumped 8 bbls. of oil daily at total depth of 3,446 feet.

Westheimer and others No. 6 McGee, NE SW NE Section 23-7-4, found Calvin sand at 3,111 feet, total depth 3,131 feet, and produced 50 bbls. of oil in 24 hours.

Tilco Oil Co. No. 2 Smith, NE SW SE Section 26-7-4, was good for 150 bbls. of oil daily after acidizing dolomite topped at 4,100 feet, total depth 4,160 feet.

New work in Pottawatomie County: F. W. Cooper Drilling Co. No. 1 Zoeller, NE SE SE Section 30-7-5, cellar and pits; Taber, Coleman & Hisson No. 1 Miller, SE cor. Section 29-7-5, rigging up rotary; Gulf Oil Corp. No. 3 Johnson, SE SE NW Section 29-7-5, building rig; Wood Oil Co. No. 3 Swan, NE SW SE Section 36-7-4, cellar and pits; Frank Meadors No. 1 Hurford, NW NW SE Section 2-6-4, drilling below 2,100 feet; Denver Producing & Refining Co. No. 2 Richards, C N half NE NE Section 2-6-4, building rig; Indian States Oil Co. No. 1 Williams, C E half NE NE Section 6-10-4, Shawnee pool, cellar and pits; Hall & Briscoe No. 3 Smith, NE cor. Section 32-7-5, rigging up rotary; J. P. Smith No. 2-A Woods, NW NW SW Section 31-7-5, building rig.

Seminole County

Wood Oil Co. No. 1 Ashley, SE cor. Section 22-7-5, was a recent Seminole County completion. It had Earlsboro sand at 3,105 feet, total depth 4,280 feet, and produced 2,000,000 cu. ft. of gas in 24 hours.

Pure Oil Co. No. 1 Choya, NW SW NW Section 21-7-6, West Little River area, was building rig. Terry & Evans No. 1 Scroggins, NW SW SW Section 3-6-6, Dora pool, was drilling. Sunray Oil Co. No. 2 Swan, SE NE SE Section 12-6-5, Grayson field, had dug cellar and pits. Same company's No. 1 Key, SE NW SE Section 12-6-5, had spudded.

Pontotoc County

H. Z. Moore No. 1 Payne, SE NW SE Section 16-4-4, Pontotoc County, recently was abandoned at 945 feet, total depth.

R. W. Vierson No. 1 Hatcher, NW cor. Section 22-5-5, East Bebee area, had spudded. Senora Oil & Gas Co. No. 1-A Burke, SW SE SE Section 25-5-4, Bebee field, had dug cellar and pits. Delaney No. 2 Killcrease, SW SE NW Section 7-4-8, North Steedman district, was a location. Konawa Development Co. No. 2 Masters, SE SW SW Section 14-2-7, Fitts field, had spudded.

Lincoln County

Wilcox Oil & Gas Co. completed No. 15 DeLozier, SW NW NW Section 15-14-6, for 140 bbls. of oil daily

after a shot in Prue sand topped at 2,943 feet, total depth 3,041 feet. It is in the Sac and Fox pool.

Same company's No. 19 Sac and Fox, SW NW SW Section 15-14-6, found Prue sand at 2,933 feet, was bottomed at 3,037 feet, was shot and pumped 191 bbls. of oil daily.

The company's No. 20 Sac and Fox, SW SW NW Section 15-14-6, topped Prue sand at 2,925 feet, total depth 2,933 feet, was shot and pumped 229 bbls. of oil daily.

Creek County

L. B. Jackson No. 1 Gouge, SE SE SW Section 33-18-10, Creek County, pumped 75 bbls. of oil in 24 hours and was completed at 2,641 feet, total depth.

Adams and Midco Oil Co. No. 2 Leverett, SE NE NW Section 7-16-10, was shot and produced 150 bbls. of oil daily. It topped Bartlesville sand at 2,300 feet, total depth 3,350 feet, and plugged back to complete.

Joseph No. 1 Porter, NW NE SW SW Section 23-17-15, was abandoned at 1,136 feet, total depth.

Natural Petroleum Co. No. 3 McIntosh, NW SW NE NW Section 26-18-7, produced 1,600,000 cu. ft. of gas at 611 feet, total depth.

Okmulgee-Muskogee Counties

M. E. Craig No. 1 Lewis, NW NW SW NE Section 25-14-14, was completed recently for 8 bbls. of oil in 24 hours at 1,116 feet, total depth. Booch sand was topped at 1,083 feet. The well was shot.

Oklahoma Oil Co. No. 2 Lasky, NE NE SE Section 17-13-11, was dry and abandoned at 3,281 feet, total depth.

J. E. Dow and associates No. 2-A Rentie, SE NW SE NW Section 13-14-14, found Booch sand at 1,041 feet, was bottomed at 1,075 feet and pumped 5 bbls. of oil in 24 hours.

J. L. Selby No. 9 Sutton, NW SW SE Section 33-14-14, was abandoned at 1,230 feet, total depth.

Young No. 6 Bruner, SW NE SE Section 5-15-14, was dry and abandoned at 1,561 feet, total depth.

The one completion reported in Muskogee County was J. R. Parks No. 6 Hildebrand, NW NE SE Section 17-14-19, abandoned at 645 feet, total depth.

George Finch, trustee, No. 2 Bell, NE cor. Section 34-15-18, Muskogee County, was a machine.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending January 21, and for the preceding week, was as follows:

	Barrels	
	Jan. 21	Jan. 14
Allen	5,950	5,975
Billings	5,025	5,050
Burbank	7,625	7,600
South Burbank	9,300	9,275
Balance Osage	16,300	16,250
Blackwell district	3,900	3,950
Bristow-Slick	6,700	6,725
Chandler	1,875	1,900
Crescent	3,275	3,425
Cromwell	3,075	3,150
Cushing-Shamrock	10,225	10,275
Duncan district	4,225	4,250
Edmond	5,000	4,625
Fish	2,775	2,825
Fitts	32,225	31,475
Jesse	2,450	2,525
Graham-Fox	4,225	4,500
Gray	825	825
Healdton	9,075	9,575
Hewitt	3,450	3,425
Keokuk	3,675	3,750
Konawa	1,200	1,225
Lucien	7,525	7,700
Moore	4,650	4,150
Oklahoma City	103,525	95,600
Olympic	3,675	3,725
Ramsey	2,500	2,550
Sasakwa	1,300	1,325
Sholem-Alechem	2,350	2,525
Seminole district:		
Bowlegs	7,250	7,475
Carr City	2,725	2,700
Dora	4,500	4,550
Earlsboro	4,025	4,150
South Earlsboro	450	450
East Earlsboro	3,750	3,775
Little River	5,750	5,875
East Little River	725	750
Maud	725	775
Mission	1,300	1,325
Seminole	7,125	7,375
East Seminole	1,475	1,500
Searight	2,250	2,300
Total Seminole	42,050	43,000
St. Louis-Pearson	23,750	23,875
Tatums	1,750	2,025
Tonkawa-Garber-Thomas	4,100	4,150
Wewoka	2,050	2,100
Yale-Jennings	3,575	3,650
Other pools	81,750	82,000
Total Oklahoma	426,925	420,950

Tulsa County

One completion was reported in Tulsa County, at Tellrail No. 1-A Harkey, SE cor. Section 31-18-14, abandoned at 1,655 feet, total depth.

A. Pepis No. 2-A Bishop, CWL SE SW Section 35-19-12, Tulsa County, was rigging up machine.

Osage-Pawnee Counties

W. H. Twyman No. 2 Osage, SE SE NW Section 32-22-8, Osage County, was dry and abandoned at 2,160 feet, total depth.

Johnson Oil Refining Co. No. 8 Beyl, NW SW NE Section 27-20-9, Pawnee County, pumped 34 bbls. of oil in 24 hours after a shot and was completed at 2,082 feet, total depth.

Peter Adamson Co. No. 2 Sharp, NE NW NE SW Section 34-21-8, was dry and abandoned at 1,701 feet, total depth.

Hughes County

Marbett No. 1 Breeding, NE SW NE Section 12-7-8, Hughes County, found Calvin sand at 1,084 feet, was bottomed at 1,095 feet, and pumped 15 bbls. of oil daily after a shot.

Al Spears No. 1 Oliphant, SE SW SE Section 7-9-9, Gilcrease area, was drilling ahead.

Carter-Marshall Counties

Magnolia Petroleum Co. No. 1-A Hefner-Mills, C SW NE Section 27-2s-3w, Fox field, Carter County, found oolitic lime at 7,932-96 feet, total depth. It had initial production of 834 bbls. of 40-gravity oil in 24 hours, with 1,439 bbls. of water, flowing by high-pressure gas.

Gulf Oil Corp. No. 8 Garrett, C NW SW Section 27-2s-3w, also in the deep zone at Fox, had oolitic lime at 8,265-8,315 feet, total depth, failed to get results by acidizing and shooting, and was dry and abandoned.

Robert Swan No. 1-A Pool, SE NE SE Section 29-1s-2w, was drilling below 350 feet.

Mutual Investment Co. No. 1-A Null, C W half SW NW Section 24-5s-5, Madill area, Marshall County, was dry and abandoned at 792 feet, total depth.

(Continued on Page 237)

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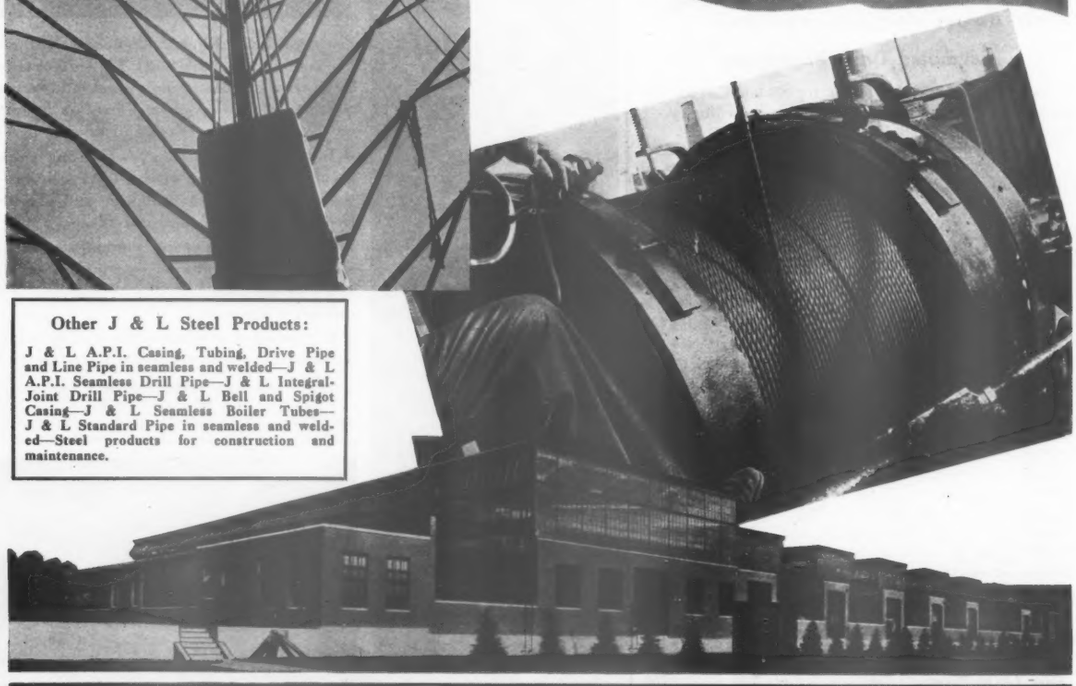

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Pittsburgh—Tulsa Branches in Old and New Fields

Kansas Developments

By
DAL DALRYMPLE

Silica-Ellinwood Link Well Makes 2,244-Bbl. Potential

The Silica and Ellinwood pools in Barton County, Kansas, apparently have been linked at Stanolind Oil & Gas Co. No. 14 Panning, CNL SW SE Section 10-20-11w, which made official potential of 2,244 bbls. of oil daily and was near completion. Location is about one-half mile east of Ellinwood production and about five-eighths of a mile southwest of the Silica field. Arbuckle lime was topped at 3,275 feet, total depth 3,283 feet.

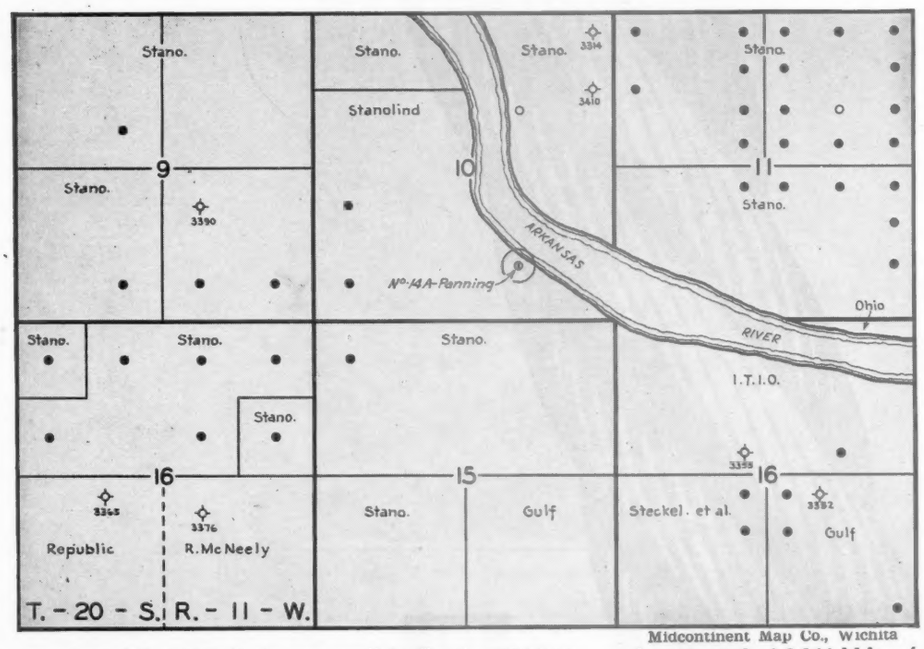
Another Barton County discovery well was near completion at Long & Johnson No. 1 Eveleigh, SW SW NE Section 3-18-14w, 3 miles west of the town of Hoisington. It found Arbuckle lime at 3,342 feet and was bottomed at 3,371 feet. Oil rose 3,000 feet in the hole and began slopping over the casinghead when 5-inch casing was set on top of the lime. It later swabbed 24 bbls. of 35.5-gravity oil in three hours. Tubing was run and it was to be tested after acidizing. Offset acreage is held by Mid-Continent Petroleum Corp., Gulf Oil Corp., Texas Co. and Web-Son Oil & Royalty Co.

Amerada Petroleum Corp. No. 1 Kruckenberger, C NE NE Section 14-19-15w, a wildcat that may open still another Barton County pool, was due for test after acidizing with 1,000 and 3,000 gallons. Arbuckle lime was topped at 3,572 feet, total depth 3,585 feet, with saturation found in cores at 3,580-85 feet. Location is 9 miles northwest of Great Bend and about 5 miles northeast of the Albert pool.

Topeka lime production was uncovered in the Ainsworth pool, Barton County, at Skelly Oil Co. No. 1 Gage, SE SE SW Section 35-16-13w. Originally bottomed at 3,383 feet in dry quartzite, it was plugged back to 2,929 feet in Topeka lime and casing perforated at 2,903-08 feet and 2,914-29 feet. After treating with 5,000 gallons of acid, it made potential of 451 bbls. of oil. Other production in the pool is from Arbuckle lime.

Gerald M. Smith and others No. 1-A Kingsbury, NW NE NW Section 9-33-6, in the new Wilson pool southeast of Winfield in Cowley County, was due for completion as the second producer in the field. It found Arbuckle lime at 3,510-12½ feet, 6-inch casing was set at 3,506 feet and 42.5-gravity oil rose within 200 feet of top of casing in five hours after drilling plug. It will be the second producer in the pool and is east offset to the discovery well.

The new Buhler pool in Reno County apparently was being extended one-half mile southwestward at Westgate-Greenland Oil Co. No. 1 Haggarty, NE NE SW Section 36-22-5w. Simpson sand was found at 3,928 feet, and 3 feet of saturation was reported to have been found in cores at 3,926-31 feet. Seven-inch casing was being set and it was to be standardized for completion. It will be the second producer in the pool if completed as an oil well.



Midcontinent Map Co., Wichita

Stanolind Oil & Gas Co.'s new well in Section 10-20-11w made potential of 2,244 bbls. of oil daily and appeared to be the connecting link between the Silica and Ellinwood pools in Barton County

The South Sittner pool in Stafford County appeared due for an extension three-fourth mile to the northwest at Stanolind Oil & Gas Co. No. 3 Siefkes, SW SW SE Section 34-21-12w. It had oil showing in Arbuckle lime at 3,619-22 feet, and operators were to set casing and move in standard tools for completion.

Ace Oil Co. was endeavoring to extend the Kuske pool, southeast of the Goodrich area in Sedgwick County, at No. 1 Kirkpatrick, SW SE NW Section 24-25-1e. It is two locations southwest of production. Operators set 10-inch casing at 1,755 feet and were drilling ahead below 1,900 feet. Kuske production is from the Mississippi horizon at around 3,017 feet.

Market problems of Montgomery County stripper well producers appear to have been settled with formation of Producers, Inc., an organization of operators. The new company gathers the oil and delivers it to the main lines of Sinclair Prairie Pipe Line Co. C. I. Layton of Independence, president of the gathering company, announced recently that 100 per cent of the stripper production now is being marketed.

Among the Wildcats

The new Russell County pool opener, Earl Wakefield and others No. 1 Meharg, SE cor. Section 16-15-13w, about midway between the Coralena and Fairfield pools, was completed at 3,112 feet, total depth, pumping and flowing 279 bbls. of oil in eight hours and making potential of 837 bbls. daily. Production was from Lansing lime at 3,099-3,108 feet.

Simpson & Estes No. 1 farm, SE NE NE Section 30-27-7, wildcat in Butler County, had a slight showing of oil at 2,714-30 feet but the hole filled with water and it was abandoned at 3,206 feet, total depth.

C. I. Ross No. 1 Backus, SE SE NE Section 31-30-3e, Cowley County wildcat, was dry and abandoned at 525 feet, total depth.

Gulf Oil Corp. No. 1 Louis, C N half NW SW Section 2-20-12w, wildcat west of Ellinwood in Barton County, was rigging up rotary.

Paul Martin No. 1-A Feltes, NW SW SE Section 8-16-12w, wildcat in the Beaver district, northern Barton County, was moving in material.

Rice County

Continental Oil Co. No. 5 Pickerill, NE NW SE Section 13-18-8w, Geneseo field, Rice County, topped Arbuckle lime at 3,215 feet, total depth 3,219 feet, pumped 829 bbls. of oil in eight hours and made daily potential of 2,487 bbls.

Sinclair Prairie Oil Co. completed No. 9 Wallace, NE NW SW Section 29-19-9w, Chase pool, at 3,248 feet, total depth. It had Arbuckle lime at 3,244-45 feet, pumped 58 bbls. of oil in eight hours and made potential of 174 bbls.

Continental Oil Co. No. 9 Wood, NW SE SE Section 12-18-8w, was a cellar.

Russell County

R. H. Shields completed No. 1 Tittle, NE NE SE Section 14-15-14w, Trapp field, Russell County, in Lansing lime at 3,080-3,114 feet, total depth. It pumped 485 bbls. of oil in eight hours and made potential of 1,455 bbls.

Shell Petroleum Corp. No. 5 Dumler, SE NE SW Section 36-15-14w, found Arbuckle lime at 3,317-41 feet, total depth, pumped 528 bbls. of oil in eight hours with 3 per cent water, and was rated potentially at 1,583 bbls. of oil.

Smoky Hill Oil Corp. No. 14 Miller, NE SW SE Section 30-14-13w, Hall pool, had gas pay at 2,262-66 feet, was bottomed at 2,345 feet and produced 500,000 cu. ft. of gas daily.

Texon Oil Co. No. 1 Rogg, NE NW NW Section 35-14-13w, Letsch area, had Lansing lime at 2,814-56 feet, total depth 2,864 feet, plugged back to 2,856 feet, pumped 655 bbls. of oil in eight hours and made potential of 1,965 bbls.

J. J. Hall No. 2 Landon, SE SW SE Section 11-15-14w, Trapp area, was a location.

Stafford County

E. H. Moore, Inc., No. 2 Johnson, SE SW NE Section 13-24-11w, Zenith field, Stafford County, found Misener sand at 3,773-96 feet, total depth, flowed 162 bbls. of oil in four hours and made potential of 1,870 bbls.

Derby Oil Co. No. 2 McComb, NW NE NW Section 24-24-11w, pumped 113 bbls. of oil and 73 bbls. of water in eight hours, making potential of 342 bbls. of oil in 24 hours. It had Misener sand at 3,809-30 feet, total depth.

E. H. Moore, Inc., No. 6 Johnson, SE SW SE Section 13-24-11w, had Misener sand at 3,797-3,806 feet, was bottomed at 3,811 feet, and plugged back to 3,806 feet. It was completed for potential of 48 bbls. of oil.

New activity in Stafford County: Stanolind Oil & Gas Co. No. 7 Hartnett, SW NE NW Section 13-24-11w, cellar; same company's No. 8 Hartnett, SE NW NW Section 13-24-11w, cellar; same company's No. 7-B Ferris, NW cor. Section 23-24-11w, cellar; the company's No. 6 Hartnett, SE NE NW Section 13-24-11w, cellar.

Estimated Daily Production

Estimated daily production for Kansas for the week ending January 21, and for the preceding week, was as follows:

	Barrels	
	Jan. 21	Jan. 14
Oxford City	925	1,000
Burrton	8,525	8,625
Ritz-Canton	3,950	3,975
Graber	3,150	2,900
Hollow-Nikkel	1,725	1,750
Lerado	800	925
Voshell	1,875	1,900
Wellington	2,275	2,200
Ellsworth County:		
Lorraine	1,900	1,750
Other pools	1,395	1,350
Rice-Barton counties:		
Bloomer	2,375	1,950
Chase	4,075	4,250
Geneseo	3,975	3,575
Raymond	750	750
Silica	11,200	9,750
South Silica	2,100	1,800
Keesling	850	375
Miscellaneous Rice	8,140	6,000
Miscellaneous Barton	11,010	7,610
Wherry	3,375	3,925
Russell County	21,475	22,625
Sedgwick County	4,000	4,185
Ellis:		
Bemis	4,350	5,975
Miscellaneous	3,910	3,330
Kingman County	560	655
Stafford County	5,496	4,950
Greenwood County	8,900	8,900
Butler County	19,750	19,625
Other fields	12,389	15,695
Total Kansas	155,200	152,300

Barton County

T. C. Johnson No. 8 Bitter, NW cor. Section 8-16-13w, Barton County sector of the Trapp district, was completed in Arbuckle lime found at 3,345-54 feet, total depth. It pumped 773 bbls. of oil in eight hours and made daily potential of 2,319 bbls.

Shell Petroleum Corp. No. 1-E Schneider, NE SE NW Section 2-16-14w, topped Lansing lime at 3,085 feet, conglomerate 3,304 feet, and was dry and abandoned at 3,357 feet, total depth.

Stanolind Oil & Gas Co. No. 1-B Hagen, NW cor. Section 29-20-11w, Hagen pool, swabbed 12 bbls. of water in six hours and was abandoned at total depth of 3,437 feet.

Cities Service Oil Co. No. 1 Luerman, NW NW SE Section 18-16-13w, Trapp area, was rigging up rotary.

Cowley County

The largest of two producers completed in the Hittle pool, Cowley County, was Trees Oil Co. No. 6 Lewis, SW NE NE Section 28-31-4. It had Arbuckle lime at 3,355-61 feet, total depth, pumped 877 bbls. of oil in eight hours and was rated potentially at 2,631 bbls. daily.

Arthur Brewer Co. No. 2 Lewis, NE SW NE Section 28-31-4, topped Arbuckle lime at 3,330 feet, was bottomed at 3,357 feet in lime, pumped and flowed 514 bbls. of oil in eight hours and made potential of 1,541 bbls.

Davisson and others No. 1 Meyers, NW NW SE Section 29-30-5, failed to find oil production and was dry and abandoned at 2,065 feet, total depth.

Pryor, Lockhart & Smith No. 2 Clark, SE SW SW Section 4-33-6e, had dug cellar.

Sedgwick County

Lauck Petroleum Co. No. 1 Goodacre, NW NW SE Section 32-28-2e, Derby area, Sedgwick County, topped Stalnaker sand at 2,195 feet, was bottomed at 2,221 feet, and produced 26,100,000 cu. ft. of gas daily. It was said to be the largest gas well ever completed in Sedgwick County.

McPherson-Ellsworth Counties

Springrose Drilling Co. No. 2 Carlson, SW SE NW Section 24-19-3w, McPherson County, topped Mississippi lime at 2,968 feet, was bottomed in that formation at 2,995 feet, pumped 90 bbls. of oil in eight hours and made potential of 270 bbls. of oil.

Cities Service Oil Co. No. 1 Kruse, SW SW NW Section 20-17-9w, Ellsworth County, had water in the hole and was abandoned at 3,256 feet, total depth.

Continental Oil Co. No. 3 Steinberg, NW cor. Section 27-17-8w, and same company's No. 1 Kunkle, NE NE SW Section 28-17-8w, new tests in Ellsworth County, had dug cellars.

(Continued on Page 238)

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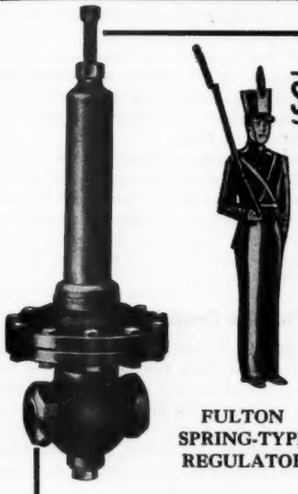

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Eastern Field Report

By STAFF CORRESPONDENT

Harrison County, Ohio, Deep Test Fails in Oriskany Sand

PITTSBURGH, Pa., Jan. 23.—The test of New Penn Development Co., William E. Snee and others on the Indian Creek Coal & Coke Co., William Johnson warrant, on Chestnut Ridge in South Union Township, Fayette County, topped the Onondaga at 6,914 feet and top of the cherty zone at 6,923 feet or subsea minus 4,290 feet as the elevation of the derrick floor is 2,633 feet.

This test ran contrary to expectations as it is 122 feet lower on the cherty zone horizon than the test of Peoples Natural Gas Co. on the Piedmont Coal Co. lease to the north, about 56 feet lower than Summit Hotel (Heyn) No. 2 and about on the same level subsea as the discovery well Summit Hotel No. 1.

While this test was some lower to the top of the Tully lime than the test on the Piedmont Coal Co. there was over 100 feet of thickening in the Marcellus shales or the interval between the base of the Tully and the Onondaga which was caused, it is believed, by the drag of a nearby fault. The present total depth is 6,925 feet and after cement spraying the hole in the bottom hundred feet, casing will be run and drilling resumed.

North of Route 40 in North Union Township, Fayette County, the test of Wasson & Co. on the J. H. Sorg farm on Chestnut Ridge is shut down for casing at a revised depth of 6,931 feet. The top of the cherty zone is corrected to 6,930 feet or subsea minus 4,345 feet. Seven-inch outside diameter extreme line casing will be run to bottom, which will permit 6-inch tools to continue the drilling.

Sixteen operations were completed in the lower Eastern fields during the week of which three were dry, 11 gas wells and two producers with a daily initial of 6 bbls. a day. An important deep test was completed in Southeast Ohio.

SOUTHEAST OHIO

In Harrison County, Southeast Ohio, Columbian Carbon Co. drilled the deep test on the George D. Miller farm near Cadiz Junction in Section 23, German Township, through the Oriskany sand, which was void of gas, oil, or water. The Corniferous lime was topped at 4,588 feet, steel line; Oriskany sand 4,769 feet bottomed at 4,790 feet. There were 10 feet of good Oriskany sand closely cemented, and 11 feet of limy sand. The elevation of this test was 1,223 feet and the Berea was topped at 1,384 feet.

In Licking County, C. R. Settles and others completed a test on the John Livingston farm in Section 10, Mary Ann Township in the Berea sand at 819 feet and it produced 5 bbls. the first day after shot. In the same quarter section, George Kisseling completed a test on the Marion Thompson farm in the Berea at 690 feet showing for a 1-bbl. pumper.

In Perry County, Kachelmacher Estate drilled on the Drake heirs farm in the southeast quarter Section 20, Monroe Township, through the Clinton sand to 3,765 feet and it was dry.

WEST VIRGINIA

No producers were completed in West Virginia. Although the price structure for Pennsylvania Grade crude continues low, operators welcomed the recent notice from the major purchasing agency which lifted curtailment and effective January 16 agreed to accept 100 per cent of the runs based on September production. Increased demand was given as the reason.

Gas Wells

In Barbour County, Hope Natural Gas Co. completed No. 7940 on the Annette Riley farm in Elk district at 4,389 feet as a gas well. The Benson sand was at 4,334-4,340 feet with 200,000 cu. ft. of gas at 4,335 feet.

In Braxton County: Pittsburgh & West Virginia Gas Co. drilled No. 7661 A. B. Mollohan in Birch district to 2,753 feet and it was dry.

In Cabell County, R. H. Adkins completed the test on the Robert L. Johnson farm in Grant district at 3,820 feet, gauging 425,000 cu. ft. at the Berea and Brown shale.

In Kanawha County, Pure Oil Co. completed No. 9 on the Slaughters Creek Coal & Land Co. tract in Cabin Creek district in the Berea sand at 3,003 feet, gauging 722,000 cu. ft.

In Mingo County, E. L. Lusher completed a second test on the Noah A. Stepp farm in Kermit district at 2,052 feet, gauging 149,000 cu. ft.

In Monongalia County, J. A. Cummins and M. A. Phillips and others completed the test on the Robert Cumberledge farm in Battelle district in the Big Injun sand, gauging 450,000 cu. ft.

In Ritchie County, Pittsburgh Oil & Gas Co. completed a test on the Coyle heirs' farm in Murphy district in the Injun sand at 1,945 feet good for 497,000 cu. ft. In Clay district, McBurney and others completed a test on the Noah Farley heirs' farm in the Squaw sand, total depth 1,980 feet, gauging 149,000 cu. ft. In Grant district, Phillip Lemon completed a test on the M. M. Morton farm in the sand formation at 1,925 feet, a very light gas well with showing of oil in the Squaw sand.

Oriskany Gas Field

Two wells were completed in the Oriskany gas pool in Kanawha County, West Virginia. In Poca district, United Carbon Co. completed No. 1 J. H. Burdette with the Oriskany sand topped at 4,932 feet, total depth 4,952 feet and a final gauge of 8,400,000 cu. ft.

In the same district, Virginia Gas Corp. completed No. 2 J. H. Burdette with 2,195,000 cu. ft. showing at 4,728 feet and the final gauge not reported.

In this district, United Fuel Gas Co. topped the Corniferous lime at 4,896 feet in No. 4795 Nancy Carney and others test and is drilling at 4,975 feet in C. O. Slater and others No. 4807; at 2,592 feet in J. A. Wines and others No. 4812; at 2,868 feet in Mamie A. Ray No. 4815; at 1,448 feet in W. M. Vance No. 4817; at 3,420 feet in W. H. Fisher No. 4818; at 1,364 feet in W. F. Beane No. 4822; at 1,760 feet in G. C. Patterson and others No. 4823; at 125 feet in W. P. Tolbert and others No. 4825; at 680 feet in M. R. Mairs and others No. 4828; rigging up the Janey Gibson and others No. 4826 and O. D. Price and others No. 4827.

In the same district, Godfrey L. Cabot, Inc., is drilling at 4,200 feet in the Putnam Co. test and 1,749 in the Helen M. Hoge test. Spartan Gas Co. is down 5,036 feet in Ernest Fisher and others No. 2; and Columbian Carbon Co. 1,155 feet in L. M. Fields and others test. In Elk district, this company has reached 1,556 feet in the M. N. Landers and others test.

Outside Deep Tests

In Harris district, Wood County, Potter Development Co. (New Penn) reached 5,896 feet deepening on the W. H. Orem farm and abandoned it. Corniferous lime was at 4,210 feet, Oriskany 4,303 feet, Newburg 5,158-79 feet with a show of gas, Keefer 5,300-65 feet, White Medina 5,710-20 feet, shale 5,720-40 feet, gray sand 5,740-80 feet, at 5,765 feet there was about 4,000 cu. ft. of gas, at 5,780 feet 1 bbl. salt water an hour.

In Jackson County, Godfrey L. Cabot, Inc., has reached 5,030 feet on the Walker and Jones lease in Washington district. In Ravenswood district, Joe Rubin, Norwood P. Johnston and others are down 326 feet on the D. P. Curry farm. In Ripley district, Everett Starcher and others have reached 1,400 feet and fishing for the tools on the R. R. Bogess farm. Columbian Carbon Co. is preparing location on the G. W. Lathey farm, same district.

In Grant district, Pleasants County, Columbian Carbon Co. is drilling at 4,770 feet on the Giles Hammat farm and producing oil from the shales.

New Work

In Calhoun County, H. S. Adams has a location for a second test on the F. M. Wilmoth farm, Sherman district, elevation 1,055 feet. South Penn Oil Co. will drill No. 4 Henry Brannon farm, elevation 1,045.3 feet. In Washington district, Forman Oil & Gas Co. has a location on the Joseph Conley farm, elevation 969 feet.

In Brooks County, Blackburn and Blackburn has a location on the John McKim farm in Cross Creek district, surface elevation of 1,125 feet. In Clay County, Elk River Gas Co. has a location on the J. S. Brown farm on Eagle Fork near State Route 16, elevation 1,041 feet.

In Gilmer County, Paul K. Weekley has a location on the Jane E. Arbuckle and others farm in Glenville district, elevation 972 feet. Pittsburgh & West Virginia Gas Co. will drill on the Alexander Lyon farm, elevation 953 feet. Kidd and Marsh have started drilling on the Charles T. Whiting (Glenville State Teachers) on Little Kanawha River. In DeKalb district, Paul K. Weekley has a location on the Ross Sterns and W. D. Turner lease, elevation 1,010 feet. W. E. McKnight and Fred M. Whiting have revised the location on the A. B. Vannoy and J. D. Vannoy heirs, elevation 950 feet.

In Ritchie County, Reno Oil Co. will drill No. 3 T. F. Overton, Macfarlan Creek in Murphy district. W. R. Hays has a location for No. 5 Levi Wilson on Dutchman Run. In Roane County, Clendenin Gas Co. has a location on the E. E. Fields farm in Harper district, elevation 720 feet. In Wetzel County, Null and Moorhead will drill No. 3 Jackson Hostutler Heirs on Church Fork of Fish Creek, Church district.

SOUTHWEST PENNSYLVANIA

One gas well drilled to deeper sands was completed in Southwest Pennsylvania and there was no new production. In Wayne Township, Greene Couuty, Cummins and Phillips deepened No. 1 W. E. Kerns to 3,411 feet with the fifth sand at 3,161 feet and 149,280 cu. ft. of gas at 3,181 feet. The bottom of that formation was at 3,195 feet.

In Richhill Township, Greene County, Burleigh Wright and others are building a rig on the Strawn heirs' farm. In Franklin Township, J. B. Myers and others have a rig up on the Sallie Morris farm.

In Center Township, Greene County, Carnegie Natural Gas Co. is drilling at 2,450 feet in No. 4 J. H. Orndoff with the Big Injun sand topped at 2,357 feet. In Morris Township, C. H. McVay is cementing a cave at 1,360 feet on the Elmas Laughman farm.

In Monongahela Township, gas was exhausted from the Salt sand in the test of Brummage and others on the S. G. Durr farm and it is being deepened and drilling at 1,465 feet. Monongahela Oil & Gas Co. has reached 800 feet in No. 3 Vance Heirs.

In Springhill Township, Greene County, North Eastern Oil & Gas Co. reached 2,730 feet deepening No. 1 J. W. McNichols. Cartland Oil Co. is drilling at 2,225-feet deepening No. 1 J. L. Donley.

Washington County

In North Strabane Township, Washington County, Keystone Drilling Co. has reached 2,902 feet on the Frank Grego farm. Beedle, Debone and others are drilling at 1,450 feet on the J. C. McNary farm.

In Hanover Township, R. M. Duden and others have reached 1,800 feet on the Roy Scarum farm. In Hopewell Township, McFadden & Co. are down 175 feet in the J. W. Reed test. In Chartiers Township, Cannonsburg Iron & Steel Co. is drilling at 2,485 feet on its fee.

(Continued on Page 237)

California Field Report

By
L. P. STOCKMAN

McClung Area, Kern County, Wildcat Cores 50-Foot Sand

LOS ANGELES, Calif., Jan. 23.—Superior Oil Co., in the McClung district of Kern County, cored approximately 50 feet of oil sand at 11,125-175 feet in No. 12 Kern County Land, 990 feet south and 330 feet west of the northeast corner of Section 3-30-26. This wildcat, about 3 miles southeast of the Greeley field, with elevation of 363 feet, logged top of the Vedder zone at 11,125 feet with the bit at 11,248 feet. The oil sand graded into a possible water sand at 11,176 feet and it is too early to estimate potentiality. Base of the Jewett shale which overlies the Vedder zone in the Round Mountain and Mount Poso fields was placed at 11,117 feet and 5 feet of conglomerate in the interval at 11,117-125 feet may be the Grit zone, a definite marker. This is the third wildcat drilled by Superior Oil Co. in this area and appears the highest structurally.

The company's initial test was No. 9 Kern County Land, same section, and the second wildcat was No. 10 Kern County Land a few hundred feet southwest of the first hole. Operations were suspended in No. 9 when the Stevens zone did not produce commercially and the crew moved to No. 10, which failed to find the Stevens zone commercially productive and the crew then returned to No. 9 and the hole was whipstocked to the northeast without success. No. 9 came in flowing 750 bbls. per day from the Stevens zone but production declined within a few days and turned to water. This well showed enough, however, to justify additional drilling and Superior Oil Co., with its holdings aggregating about 3,000 acres could not pull out of the district without one additional test. Neither No. 9 or 10 in Section 3-30-26 were carried into the Vedder interval as has been done with No. 12.

A few years ago Superior and Union Oil Co. drilled a joint wildcat in Section 11-30-26 to 12,618 feet but the Vedder was barren in this wildcat about 1 mile southeast of Superior's present operations in Section 3-30-26 and the hole was abandoned. This joint test was designated as No. 8 and Superior Oil Co. did the drilling. Top of the Vedder zone was logged in this project at 11,870 feet and the bit was still in the Vedder when operations were concluded at 12,618 feet. It is believed, based on development to the present, that the possible productive section is east of present drilling. Showings logged in Nos. 9 and 12 in Section 3-30-26, the former in the Stevens and the latter in the Vedder zone, indicate possible existence of an oil and gas field. Continental Oil Co. drilled a duster in Section 10-30-26, about 1 mile south of Superior No. 12, and Standard Oil Co. failed to find the Stevens zone productive in a wildcat in Section 4-30-26, about 1½ miles west of No. 12. The McClung district of Kern County, where Superior Oil Co. cored the probable Vedder zone is about the same distance southeast of the Greeley field as the Rio Bravo field is northwest. Most of the acreage close to the well has been leased for years and consists of large blocks, thus precluding overdevelopment.

Southeast Coalinga

Superior Oil Co., in addition to finding a possible field in the McClung area, extended the proved limits of the Southeast Coalinga field by coring 590 feet of Gatchell oil sand in No. 1 Cagle, an outpost in Section 6-20-16. Bottom of the hole is at 7,710 feet and an early production test is planned as the bit penetrated a shale body in the bottom of the hole. This is the greatest thickness of oil sand logged in the Southeast Coalinga field; the previous record thickness of the Gatchell, 506 feet, was found in Petseahon No. 31-18-F. The substantial thickness of oil zone found in No. 1 Cagle has resulted in staking of locations by Petseahon and Texas Co. as well as Superior Oil Co. on adoining acreage. No. 1 Cagle is about 1 mile northeast of the discovery well. Petseahon No. 71-18-F has topped the pay at 7,516 feet and is at 7,530 feet in oil sand. No. 37-7-F in Section 7-20-16 hit the pay at 6,886 feet and the well is drilling at 7,000 feet with the bit still in oil sand. The productive limits of the Southeast Coalinga field have been determined only in one direction, namely, to the west and operators are watching developments in the northeastern end of the structure, particularly Superior Oil Co. No. 1 Cagle. No definite indications have been found with respect to faulting, although a dominating fault probably bisects the area between Tide Water Associated Oil Co. No. 33 Guardian, a dry hole in Section 12-20-15 and No. 77 Grimes, a producer drilled by Petroleum Securities Co. in the same section. This fault probably passes east of No. 33 Guardian of Tide Water Associated Oil Co. and No. 1 Leavitt-Hintze of Universal Consolidated Oil Co., also a dry hole in Section 12-20-15.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	January 14		January 7			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	61,980	8,854	61,980	.....
Diesel and gas oil	.....	.....	91,133	13,019	91,133	.....
Gasoline	.....	.....	.....	.....	.....	122,959
Foreign exports—						
Crude oil	185,768	26,538	151,597	21,657	337,365	282,841
Fuel oil	269,735	38,534	125,341	17,906	395,076	275,873
Diesel and gas oil	101,213	14,459	100,570	14,367	201,783	146,759
Gasoline	247,098	35,300	92,306	13,187	339,404	157,158
Kerosene	75,080	10,726	.....	.....	75,080	108,510
Coastwise-domestic—						
Crude oil	145,312	20,759	306,561	43,794	451,873	203,970
Fuel oil	122,524	17,503	148,537	21,220	271,061	641,117
Diesel and gas oil	31,853	4,550	30,116	4,302	61,969	53,432
Gasoline	274,353	39,193	151,214	21,602	425,567	615,439
Kerosene	.....	.....	18,988	2,713	.....	15,907

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic (None)—						
Foreign exports—						
Crude oil	.....	.....	.....	.....	.....	245,949
Fuel oil	.....	.....	.....	.....	.....	26,031
Diesel and gas oil	.....	.....	.....	.....	.....	98,893
Gasoline	.....	.....	.....	.....	.....	66,122
Kerosene	.....	.....	.....	.....	.....	39,946
Coastwise-domestic—						
Fuel oil	216,794	30,971	185,123	26,446	401,917	269,219
Diesel and gas oil	55,963	7,995	29,525	4,218	85,488	85,028
Gasoline	278,316	39,759	169,260	24,180	447,576	412,339
Kerosene	33,174	4,739	26,194	3,742	59,368	40,951

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Fuel oil	.....	.....	61,980	8,854	61,980	.....
Diesel and gas oil	.....	.....	91,133	13,019	91,113	.....
Gasoline	.....	.....	.....	.....	.....	122,959
Foreign exports—						
Crude oil	185,768	26,538	151,597	21,657	337,365	528,790
Fuel oil	269,735	38,534	125,341	17,906	395,076	301,904
Diesel and gas oil	101,213	14,459	100,570	14,367	201,783	245,652
Gasoline	247,098	35,300	92,306	13,187	339,404	223,280
Kerosene	75,080	10,726	.....	.....	75,080	148,456
Coastwise-domestic—						
Crude oil	145,312	20,759	306,561	43,794	451,873	203,970
Fuel oil	339,318	48,474	333,660	49,094	672,978	910,336
Diesel and gas oil	87,816	12,545	59,641	8,520	147,457	138,460
Gasoline	552,669	78,953	320,474	45,782	873,143	1,027,778
Kerosene	33,174	4,739	45,182	6,455	59,368	56,858

Torrance—Harbor City

Three wells were completed in the Eshelman section east of the Lomita district of the Torrance field. These were Whittier Santa Fe Springs Oil Synd. No. 1 Lomita, flowing 1,325 bbls. of 25.8 gravity, Maldum Petroleum Co. No. 3 Lomita, flowing 1,020 bbls. of 25.9 gravity and West Basin Oil Co. No. 1 Eyster, flowing 370 bbls. of 26-3 gravity. These wells are about 500 feet east of Felix Mallon No. 2 Lomita, completed December 12, flowing 750 bbls. per day from the Del Amo zone, which is the most prolific sand, although recent completions are producing from a series of zones. The area is about 250 feet lower structurally than the west end of the Lomita area, but the Eshelman district has a much better porosity and saturation and is yielding larger wells. No. 1 Lomitá of Whittier Santa Fe Springs Oil Syndicate, brought in flowing through two 1-inch beans, is producing from 377 feet of oil zone, including the upper and lower Del Amo and the Eshelman zone above the Del Amo. It was bottomed at 5,158 feet.

Maldum Petroleum Co. No. 3 Lomita was brought in flowing through open line and was controlled by a thirty-two sixty-fourths inch bean, which reduced production to 620 bbls. of 25.9 gravity from 5,160 feet. This well, finished with a 7-inch water string cemented at 4,927 feet, is producing from the Del Amo zone exclusively. West Basin Oil Co. No. 1 Eyster, which was brought in flowing through a twenty-eight sixty-fourths inch bean from 5,145 feet, was finished with a solid 4½-inch string landed on bottom and perforated at intervals. The well has 331 feet of formation open behind the perforations, top of the pay having been logged at 4,833 feet. Logan Petroleum Co. No. 1 Lomita, completed several days ago at 5,145 feet, has settled down gravity from 5,254 feet through a thirty-two sixty fourths inch bean. In the Harbor City area, D. & B. Oil Co., which completed the discovery well in the Harbor City area, has completed No. 3 flowing 142 bbls. of 28.5 gravity from 5,254 feet through a thirty-two sixty-fourths inch bean. At present the Eshelman section of the Torrance field is yielding the most satisfactory wells as recent completions in the Lomita section and those completed in the Harbor City area have been small. The Eshelman district is practically the eastern end of the Lomita area. Harbor City is about 3,000 feet south of the Lomita section of the Torrance field and is a separate accumulation.

West Montebello

The West Montebello field of Los Angeles Basin is expected to see an increase in drilling, especially in the town lot section, unless operators refrain immediately from deep zone development. So far drilling has been limited to the lower finger of the sixth zone, but there is a very definite tendency to undertake immediate development of the seventh or Hathaway zone. One operator expects to drill to the Hathaway zone and has informed the field committee he will suspend production activities within one week after completion. The field committee is hoping to secure approval of a plan to refrain from deeper drilling until next year and while all but one operator have sanctioned the program it

must be unanimous to prove beneficial. If the seventh or Hathaway zone proves highly productive it may mean the end of curtailment at Montebello, because if one operator goes down into the sand others must follow to prevent drainage. Present indications point to probability that several additional wells will be drilled in the extreme eastern end of the western extension and one or two are almost assured of commercial production.

Union Oil Co. has focused attention on this area by drilling No. 1 Calkins and this has resulted in a resumption of drilling by Texas Co. in No. 5 Mulholland, which has been standing rigged up for several weeks. Completion of No. 1 Calkins as a commercial producer will stimulate drilling east of Montebello Boulevard and both north and south of Lincoln Boulevard. No. 1 Calkins is drilling at 7,018 feet, but the company's field department is not sure whether the bit is in the lower part of the sixth or the upper part of the seventh zone, as the log does not correlate with data secured from other wells drilled to the west. It is the intention to drill purely as an exploratory measure as this log will permit correlation with No. 30 La Merced, which the company is drilling further east and well within the productive limits of the older field and definitely east of a theoretical fault heretofore believed to limit the eastern limits of production of the western extension.

Another two weeks should determine the possibility of developing commercial production east of this possible fault and it appears a certainty that if No. 30 La Merced results in production Standard Oil Co. will undertake deeper drilling in the west end of its Baldwin property. During the week, Standard Oil Co. recompleted No. 1 McDonald flowing 1,168 bbls. of 36.4 gravity through a thirty-two-sixty-fourths inch bean from the lower finger of the sixth zone with bottom at 6,681 feet. In the west end of the Montebello extension and well within the town lot area, Olympic Refining Co. has drilled entirely through the sixth zone, including the Master zone, which comprises the fourth finger of the sixth and is now at 7,019 feet. It is the intention to complete this well in the seventh or Hathaway zone as a string of 8⅝-inch casing has been landed below the lower member of the sixth zone. The future status of Olympic No. 1 Smith will determine the curtailment to be expected in the Montebello field.

Rosecrans

Three new wells were completed in the Rosecrans field of Los Angeles Basin, but one, Union Oil Co. No. 30 Rosecrans, may require some remedial work as the initial daily production of 320 bbls. was cutting 35 per cent. This well was bottomed at 7,660 feet and finished with an 8⅝-inch water string landed at 7,542 feet. The Mining Bureau gave the company only a deferred decision indicating there was some question regarding the effectiveness of the cement job on the water string. The hole was finished with 145 feet of 5¾-inch liner, including 116 feet of 120-mesh screen with top of the perforations at 7,541 feet. No. 1 Cole of Hydrocarbon Products, Inc., was brought in flowing 720 bbls. of 32.6 gravity through a twenty-eight-sixty-fourths inch bean from 7,752 feet. Finished with an 8⅝-inch water string cemented at 7,665 feet and 135 feet of 5-inch liner, including 85 feet of perforated, it shows a tubing pressure of 160 pounds and a casing pressure of 600 pounds. J. L. O'Donnell No. 46, in the southern end of the Rosecrans field, has been completed flowing 440 bbls. of 35.6 gravity from 7,752 feet. Royalty Service Corp. No. 3 Gordon, which has failed to respond to swabbing operations of several days' duration, staged a short blowout after a sand bridge had been cleaned out and the company should be ready for a production test within a few days. This well is bottomed at 7,835 feet and has an 8⅝-inch water string landed at 7,714 feet and appears to be dry as far as water is concerned.

Wilmington

Signal Oil & Gas Co. has finally started tideland development in the Long Beach Harbor section of the Wilmington field, where it has been awarded a contract to develop tideland property held by the City of Long Beach. The company is grading location for Nos. 1-D and 2-D, which will be drilled from surface location on property of Union Pacific Railroad and bottomed beneath the tideland by directional drilling. On the Pacific Dock property the company has staked location for Nos. 2, 3 and 4, which will be drilled from surface location on the Pacific Dock property and bottomed beneath the tideland. Complete agreement was reached some time ago by Signal Oil & Gas Co., Pacific Dock and the city of Long Beach as the result of a compromise between all parties following a delay of several months during which time the state contested ownership of the tidelands in question. The State Supreme Court held that all reclaimed land built up by dredging the harbor belonged to those in possession by right of purchase or through reclamation work on the part of the Long Beach Harbor Commission. Two relatively small wells were completed in the Wilmington field this week. Due to curtailment work all wells are being completed with small flow beans to prevent disturbing the production equilibrium among properties. General Petroleum Corp., discoverer of the Wilmington field, completed No. 37 Harbor Community flowing 768 bbls. of 23.5 gravity through a twenty-eight-sixty-fourths inch bean from 3,535 feet. This new well was finished with a 6⅝-inch flow string landed at 2,954 feet and an 8⅝-inch liner, including 580 feet of 6⅝ inch landed on bottom of the hole at 3,535 feet and carrying perforations at 2,554-954 feet and at 3,450-535 feet and cemented through perforations at 3,445 feet. Union Pacific Railroad Co. No. 98 has been completed flowing 230 bbls. of 21.8 gravity from the Ranger zone with bottom at 2,910 feet.

Kettleman North Dome

Two wells were put on production in the Kettleman North Dome field but only one, Kenda No. 65-20-Q in Section 20-22-18, showed large production. It was brought in flowing 1,295 bbls. of 33.5 gravity and 1,817,000 cu. ft. of gas from the Temblor with bottom at 7,650 feet. This well, which was held up with mechanical trouble for several days, was finished with an 8⅝-inch water string landed at 7,025 feet and 662 feet of 6⅝-inch liner, including 617 feet of perforated landed at 7,645 feet and cemented through perforations at 7,160 feet and 7,490 feet. No. 65-20-Q logged top of the McLure shale at 5,270 feet and reached top of the Temblor at 6,737 feet. The well has an elevation of 1,033 feet and was spudded in September 27, 1938. Union Oil Co. has recompleted No. 4 King in the Hu... ian section of the Kettleman North Dome field aft... cleaning out and straightening out the hole flowi... 275 bbls. of 33.9 gravity on gas lift with bottom a... 3,520 feet. Drilling operations have tapered off, although Kenda and Standard Oil Co., largest operators, are starting new wells

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from time to time. There is a tendency to move eastward as the west end has been fully developed with possible exception of the Avenal zone, which has failed to come up to expectations. Next week Kenda field department expects to have No. 36-22-Q in Section 22-22-18 tanking oil, as drilling has been concluded at 7,460 feet.

Ventura Avenue

Two new wells were completed in the Ventura Avenue field, Shell Oil Co. No. 97 Taylor and Tide Water Associated Oil Co. No. 36 Ventura Land & Water. The former was completed flowing 2,144 bbls. of 31.9 gravity and 1,483,000 cu. ft. of gas from 8,586 feet. This well is along the north central edge of the field. Tide Water Associated Oil Co. No. 36 Ventura Land & Water has been completed flowing 497 bbls. of 29.7 gravity cutting 10 per cent, and 570,000 cu. ft. of gas. Tide Water Associated Oil Co. No. 81 Lloyd completed last week flowing 1,620 bbls. from 8,980 feet, subsequently established a potential daily production of 2,129 bbls. of 32.1 gravity before being beaned back. In the Santa Barbara Mesa field of Santa Barbara County, Trans-Oceanic Oil Co. has completed No. 2 Mdivani flowing 125 bbls. of 15.1 gravity oil from 1,500 feet. This well on the Lowe property will probably show a larger production when placed on the bean.

Los Angeles Basin

In the Huntington Beach field, Southwest Exploration Co. completed its fifth producing well when No. 5 State was brought in pumping 345 bbls. of 27.4 gravity oil cutting 4 per cent from 4,116 feet. Southwest Exploration Co., which was awarded a contract by the State of California and later approved by the City of Huntington Beach, completed this well out in the tidelands beneath the Pacific Ocean. It showed the largest production recorded by the company to date. The company's next completion is expected to be No. 6, at present at 3,750 feet, and this should be followed by No. 14 State. Ramsey Petroleum Co. was the highest bidder with a bid of 60¼ per cent for four tracts aggregating 269 acres of tideland in the Long Beach section, but there is still a question whether the company will be awarded the lease. Opposition has been aroused by independent operators who want the bids thrown out and the acreage split up into small tracts.

San Joaquin Basin

In the Canal field, Shell Oil Co. extended the productive limits at least one location west by completing No. 34-14-A Kern County Land flowing 3,390 bbls. of 35.4 gravity and 3,125,000 cu. ft. of gas from the Stevens zone with bottom at 8,521 feet, but plugged back to 8,425 feet. In the Ten Section field, Shell No. 81-29-B Kern County Land has been completed flowing 1,850 bbls. of 34.9 gravity from 8,220 feet. It extends the productive limits one location east. In the Kern River field, Helm & Smith have completed No. 11-A Kernco in Section 34-28-28 pumping 15 bbls. of 14.1 gravity from 677 feet. This well represents an average completion for this field, which has been producing for more than 40 years, and which is a water drive field instead of a gas drive field.

Eastern Kentucky Fields

(Continued from Page 212)

8 bbls. of oil daily. In this district Boyd, Knox & Brown are down 300 feet in No. 4 on the I. T. Rogers land at Rogers Chapel.

In Martin County Kentucky West Virginia Gas Co. is down 2,310 feet in No. 5249 Alie Ward on Coldwater Fork. The company is drilling at the 1,161-foot level in No. 5219 C. W. Preece, nearby. This is a cleaning-out operation.

Dr. Leman and others are at the 650-foot mark in No. 1 W. B. Bush in the Hell Creek district of Lee County but having trouble with the casing leaking.

In the Big Sinking district of Lee County W. C. Wiggins has reached the 800-foot level in No. 2 M. F. Bailey land on Billies Fork.

CENTRAL OHIO

FINDLAY, Ohio, Jan. 23.—Central Ohio operators put through a rather disappointing week completing seven dry holes as against five gas wells and no oil wells.

In Athens County, Carthage Township, Ball & Co. No. 1 Addie Finsterwald, Fraction 19, was dry in the Berea, total depth 1,868 feet.

In Knox County, Monroe Township, Perkins Gas Co. No. 1 H. E. Perkins, Section 15, found no production in the Clinton sand, total depth 2,454 feet. In Union Township, Ohio Fuel Gas Co. No. 1 B. L. McMillen, Section 23, had an open flow of 950,000 cu. ft. of gas from the Clinton sand at 2,924-74 feet.

In Hocking County, Laurel Township, Atlas Drilling Co. No. 1 Pansy M. Wylie, Section 21, was abandoned in the Big Lime at 1,930 feet.

In Guernsey County, Washington Township, George Jewell No. 1 J. D. Harding, Section 14, was dry at 1,256 feet.

In Noble County, Olive Township, Permian Oil & Gas Co. No. 7 Ervin Blake, Section 15, is a small Berea sand gas well, total depth 1,715 feet.

In Monroe County, Adams Township, H. B. Walker Co. No. 1 E. C. Beall, Section 32, is good for 300,000 cu. ft. of gas, open flow, from Berea sand at 2,295-2,305 feet.

In Licking County, Mary Ann Township, Hoover Brothers No. 1 William A. Hoover, Section 16, showed a small amount of oil and gas in the Berea at 640-47 feet, but was abandoned.

In Morgan County, Marion Township, Penn Contracting Co. No. 2 Wood Hilaman, Section 12, was dry at 1,035 feet. In Marion Township, McCoy and others No. 1 Hugh Ellis, Lot 4, found the Salt sand dry at 711-27 feet.

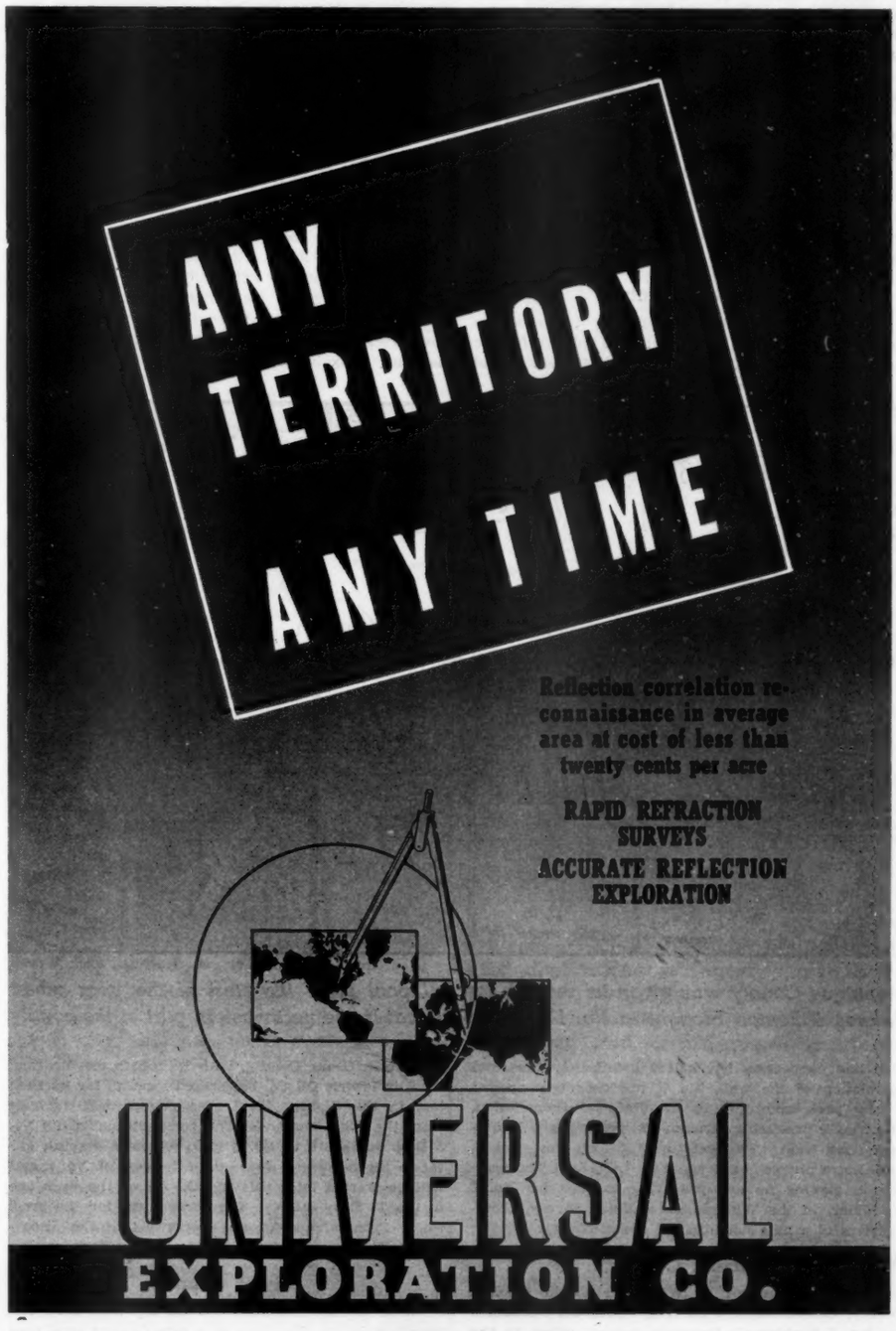
In Stark County, Plain Township, Shadrach and others No. 1 Homer Essig, Section 14, had the top of the Onondaga lime at 2,640 feet, and 340,000 cu. ft. of gas in the Oriskany sand at 2,905-09 feet.

In Washington County, Fairfield Township, Moore Oil Co. No. 1 Dayton Mindling, Section 7, had an open flow of 260,000 cu. ft. of gas in the Salt sand at 941 feet.

Lima Field

Two tests were started in the northwestern Ohio area. In Auglaize County, Logan Township, Ramsey and others are spudding on the D. M. Ramsey tract in Section 1. In Logan County, McCauley Township, Lake Gas Co. is drilling at 260 feet in the lime on the Alva McCullough farm, in Section 7.

In Seneca County, Liberty Township, Russell Johnson No. 1 Nevin Fry, Section 3, had the top of the Trenton at 1,338 feet, with a small showing of oil at 1,438 feet, drilling deeper. In Clinton Township, Sun Oil Co. No. 2 Mary Crumm is drilling in the St. Peter formation.



North and East Texas

By
D. H. STORMONT

New Montague County Pool; One Also in Archer County

WICHITA FALLS, Tex., Jan. 23.—Discovery of the second new oil pool in Montague County since the start of the new year and the definite establishment of a new pool in northern Archer County featured developments in the North Texas area.

A new pool in Montague County, about 10 miles east of Nocona, was assured in J. H. Holmes and Joe Benton No. 1 J. Bowers Estate, Block 55, M.E.P.&P. Survey, Abstract 528. It is producing from the middle Strawn sand from 2,887 feet to 2,898 feet, with 7-inch casing cemented at 2,863 feet. When the plug was drilled the well was bailed down within 800 feet of bottom and, after standing over night, an additional 1,000 feet of oil had entered the hole. Operators are attempting to swab the hole dry and shoot the pay section before making a production gauge. Two weeks ago Montague County got a new pool from the 4,600-foot lower Strawn section which yielded 600 bbls. of oil on initial gauge.

Archer County

North Archer County's new pool indicator of two weeks ago has been temporarily completed for an initial potential of 200 bbls. per day. Failure to get pipe line connection has halted indefinitely the final completion of the well, but it has definitely opened a new pool, according to the Railroad Commission. The well is producing through 158 perforations in 5¾-inch liner from 4,375 feet to 4,422 feet. Test is bottomed at a plugged-back depth of 4,430 feet. The operator is rigging up and preparing to start his No. 1 M. Miller, in the William Shaw Heirs Survey, three-quarters of a mile northeast of the discovery.

Wichita County

Three miles south of Wichita Falls in Wichita County, Continental Oil Co. and Petroleum Producers Co. No. 1 Finkler, G. Reynolds Survey, offset to the discovery well on the State Asylum lands, has been shot with 50 quarts and operators are preparing to acidize the test in a further attempt to stimulate production. Operators have recovered 179 bbls. of the oil load used in shooting the well and oil has risen 900 feet in the hole from the pay section encountered from 5,089 feet to 5,141 feet. The discovery well of the area opened last summer was completed for around 600 bbls. per day from a section at 5,076 feet to 5,129 feet, but in August the test was deepened after production had greatly fallen off and was again completed for its present production of about 60 bbls. per day from 5,129 feet to 5,375 feet. Production is from the Marble Falls formation.

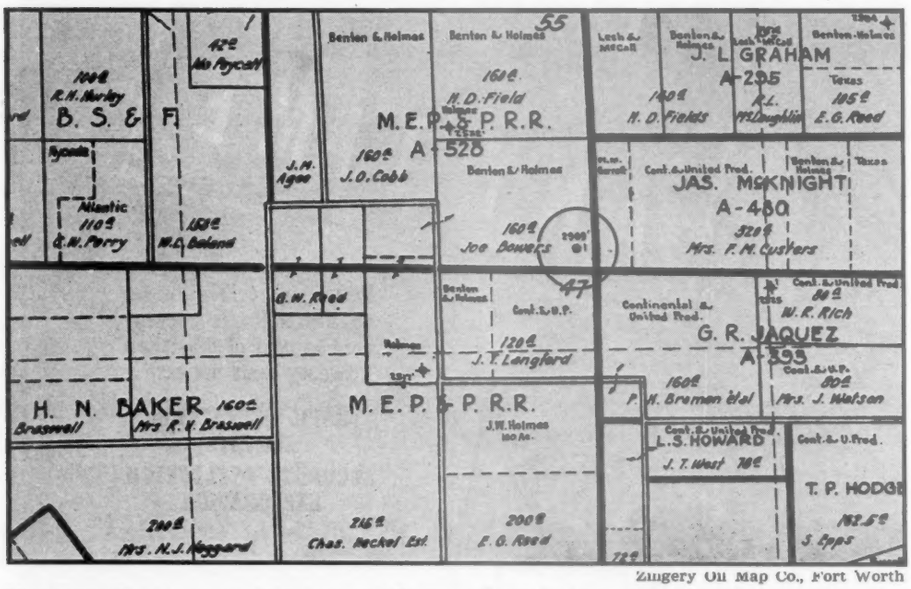
Cooke County

Cooke County's Voth pool, south of Muenster, has failed to live up to its advance showing with the discovery well now failing to flow and the second test missing the pay section. Southeast of the discovery about 1,000 feet, Beard No. 1 Voth is shut down at 1,835 feet in the Ellenburger lime with no shows having been encountered while drilling through the pay section from 1,788-93 feet. The discovery well made several heads then died when it was opened for final test. Operators are rigging up a pumping unit preparatory to again attempting a gauge.

Also in Cooke County, with its fourth test drilling, Sinclair Prairie Oil Co. has staked location for its fifth test in the Walnut Bend area opened last summer from the 4,900-foot level. The company staked its No. 5 Best due south of No. 2 Best, which is a south offset to the discovery. No. 4 Best is west of No. 2 and will be started later this month. All of the tests are in the T. Toby Survey. The second test for the area, No. 1 Putnam, quarter-mile northwest of the discovery well, was a dry hole.

Baylor County

With the British American Oil Co. first deep test resulting in the discovery of a new Canyon sand pool for Baylor County, another deep 5,500-foot test has been staked about a half mile southwest of the pool opener. The company made location for No. 1 J. E. Cope, Section 220, on its 19,000-acre block in the vicinity of Seymour. The operators plan to test the Canyon, Strawn and Bend series of Pennsylvanian age and the Ellenburger of Ordovician age for possible production. The compactness of the company's block and the fact that the pool discovery was completed for 65 bbls. of water with its 300 bbls. of oil, has hindered the usual lease play around a discovery.



Zingery Oil Map Co., Fort Worth

Montague County was given its second new oil pool since the start of the year when Holmes & Benton brought in No. 1 Bowers, wildcat in the northeastern part of the county

EASTERN TEXAS

DALLAS, Tex., Jan. 23.—Deep Marine Trinity production held the spotlight in the East Texas district during the week as the Opelika area got its third deep Glen Rose producer and the Cayuga pool Glen Rose horizon was given a mile spread to the east.

Deciding against a third drill-stem test, operators will complete Humble Oil & Refining Co. and Tide Water Associated Oil Co. and Seaboard Oil Co. No. 1 S. S. McGee, R. Acosta Survey, as a gas-distillate well. This is the third test for the large Opelika structure of eastern Henderson County and was drilled with hope of obtaining oil production, the first test being a small oil producer and the second a large distillate producer. Failure of this third test to develop oil production may end the search for deep oil on this structure.

Deep Glen Rose gas production for the Cayuga pool of Anderson, Henderson and Freestone counties was extended about a mile east and into Anderson County by Barnsdall Co. No. 2 Tubbs, which was brought in for an estimated 2,000,000 cu. ft. of gas following a 3,000-gallon acid treatment. Location is in the S. Edmondson Survey, about 1 mile east and north of Roeser & Pendleton No. 3 Bowyer, nearest Glen Rose gasser. The new well was deepened after failure to find pay in the Woodbine sand, regular producing horizon for the Cayuga pool. On a series of drill-stem tests before setting pipe the well showed little indications of production, but like No. 3 Bowyer, found the acid necessary to produce.

Houston County

In Houston County Woodbine Navarro Crossing pool, a better producer than first gauges indicated was on record for Humble Oil & Refining Co. No. 2 Dailey & Taylor, southwest extension producer to the field. A Railroad Commission gauge gave it 167 bbls. of oil daily. The flow was through one-eighth inch choke with pressures measured at 475 pounds on tubing and 2,300 pounds on casing. Oil is 36-gravity and the gas-oil ratio is 2,040 to 1. No water was reported. Originally drilled into water sand, operators plugged back and drilled a directional hole northeast to obtain production at 5,878 feet.

East Central Texas Leasing

Wildcat play again appears in the making for East Central Texas as blocks assembled during the past year are put in readiness for drilling. Henderson County Eustace area, 13 miles northwest of Athens, continues to see blocking activity as R. O. Dulaney, Fort Worth, adds to his hoped-for 5,000-acre block. He now has around 3,000 acres centering around the E. Washburn, Edward Harris and T. Helms surveys. Also in Henderson County, A. W. Tanner, Dallas, and associates are reported working on a deal to drill a Henderson County wildcat about 1½ miles north and west of the north end of the Cayuga field. Tentative location has been made on the 100-acre H. G. Smith tract, Isaac Greesom Survey. The spudding of a new wildcat in the Daingerfield district of Morris County, the Vincent A. Hughes No. 1 Hall, Levi Jordan Survey, 5 miles northeast of Daingerfield, has stimulated activity in that county.

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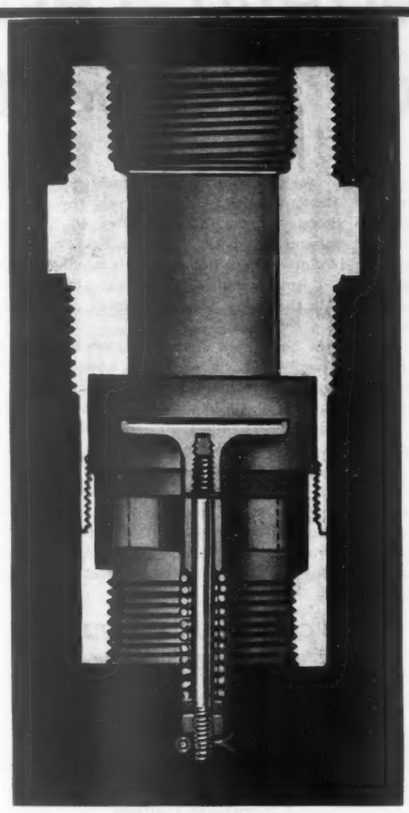

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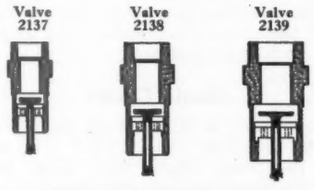

GAS PERFORMANCE DATA

Lbs. per sq. in.	Approximate flow in CU. FT. OF GAS PER HOUR at which these valves will close.					
	With Propane			With Butane		
	2137	2138	2139	2137	2138	2139
10	9200	11900	19500	8000	10400	17000
50	13300	19400	32600	11600	16900	28400
100	17200	26200	43100	15000	22800	37600
150	20700	31800	51700	18000	27700	45000

LIQUID PERFORMANCE DATA

Valve No.		2137	2138	2139
Rated capacity per minute		40	60	100
Liquid Closure cap. gals. per. min.	Propane	47 8	68.5	124
	Butane	45.0	64.5	117

Valve	Inlet	Outlet
2137	1¼" & 2"	1¼" & 2"
2138	1½" & 2½"	1½" & 2½"
2139	2" & 3"	2" & 3"

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NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns No. 1-D S. M. J. Benson, 1,017 feet, dry. Continental Oil Co. No. 1-A A. J. Demoss, 978-87 feet, 122 bbls. Cree & Hoover No. 1 J. H. Turbeville, 1,491-1,507 feet, 60 bbls. S. H. Fagadau No. 1 A. L. Abercrombie, 1,301 feet, dry. W. B. Hamilton No. 1 C. E. Graham B, 1,201 feet, dry. M. L. Drilling Co. No. 4 H. O. Prideaux, 687 feet, dry. C. H. Staley No. 10 Mrs. Anna Mangold, 3,780-3,900 feet, 665 bbls.

Clay County

Beasley and others No. 4 C. J. Shumake, 1,140-69 feet, 100 bbls. H. Bowers No. 7 C. J. Shumake, 1,142-74 feet, 110 bbls. Bridwell Oil Co. No. 26 T. C. Thornberry, 1,087-90 feet, key well.

Cooke County

Schermerhorn Oil Co. No. 18 M. Kessler, 1,319-39 feet, 10 bbls.

Jack County

J. C. Richardson No. 4 W. H. Smith, 295-310 feet, 8 bbls.

Montague County

Rogers & Rogers and others No. 1 J. E. A. Burnett, 4,645-54 feet, 650 bbls.

Wichita County

L. V. Fitzwater No. 1 J. E. Roller, abandoned location. F. S. Freeland No. 1 J. D. Cooper, abandoned location. Board of Mineral Development No. 14 State Lands, 3,660-3,838 feet, 720 bbls. E. C. Oil Co. No. 3 J. F. Miller, 3,695-3,867 feet, 640 bbls. Fain-McGaha Oil Co. No. 5 E. P. Griffin, 3,765-3,839 feet, 7,200 bbls. Madden & Goldsmith No. 2 W. B. Hamilton, 2,629-35 feet, 25 bbls. A. McCutcheon No. 1 D. C. Denny, 3,810-3,960 feet, 480 bbls. Moran Brothers No. 1 Waggoner Brothers D, 3,815-65 feet, 880 bbls.

Young County

H. Craig No. 1 Ben Schlegel, 1,166 feet, dry. Kittery Oil Co. No. 6 J. B. Daniel, 856-72 feet, 10 bbls. C. L. Walker No. 1 W. W. Farmer, 767 feet, dry. E. D. Willis No. 7 G. Stewart B, 816-82 feet, 10 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Angelina County

K. L. McHenery No. 1 Humble fee, dry and abandoned at 2,614 feet.

Houston County

Humble Oil & Refining Co. No. 2 Dailey-Taylor, 5,867-79 feet, 167 bbls.

EAST TEXAS FIELD COMPLETIONS

(1-hour tests)

Gregg County—Longview Area

A. P. Carr No. 5 G. W. Richey, 3,571-74 feet, 80 bbls. L. Carr No. 7 Richey, 3,560-75 feet, 48 bbls. A. P. Carr No. 6 Richey, 3,550-67 feet, 80 bbls. Selby-Lewis No. 39-B Snavely heirs, 3,560-90 feet, 36 bbls. Stanolind Oil & Gas Co. No. 4-A Snoddy, 3,514-64 feet, 56 bbls. R. G. Trippett No. 3 Bumpas, 3,510-28 feet, 45 bbls.

Gregg County—Kilgore Area

Gulf Oil Corp. No. 21 Ben Watson, 3,555-63 feet, 67 bbls. C. V. Landsberry No. 25 A. Money, 3,719-20 feet, 60 bbls. H. R. Smith No. 11 M. B. Hughey, 3,500-24 feet, 54 bbls. Roger Lacey No. 1 Cheeseborough, 3,537-50 feet, 45 bbls.

Rusk County—Kilgore Area

General American No. 14-B W. L. and S. M. Williams, 3,640-65 feet, 40 bbls. Humble Oil & Refining Co. No. 187 L. D. Crim, 3,635-47 feet, 70 bbls.; No. 188 L. D. Crim, 3,637-50 feet, 80 bbls.

Rusk County—Joiner Area

B. Cockburn No. 4 Afton Thrash, 3,754-3,807, 57 bbls. Gilcrease Oil Co. No. 12 D. Bradford, 3,605-49 feet, 50 bbls. Humble Oil & Refining Co. No. 14 O. Blackwell, 3,667-68 feet, 60 bbls. P. G. Lake No. 18

(Continued on Page 231)

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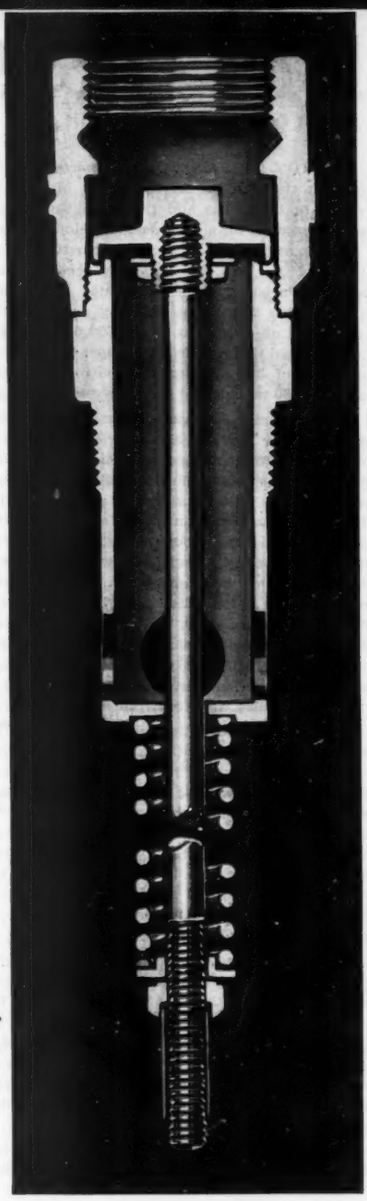

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Sparta-Wilcox Trend Test Produces on Eola Prospect

HOUSTON, Tex., Jan. 23.—The Sparta-Wilcox trend, extending through the northern tier of counties and parishes in the Texas and Louisiana Gulf Coast area was thrown open for a large scale development program as a result of completion of Sid Richardson No. 1 Haas Investment Co. on the Eola prospect, southeastern Avoyelles Parish, Coastal Louisiana. Production was obtained from the Wilcox sand by perforating casing in a 104-foot oil column at 8,445-8,550 feet, and the well was completed through an eighth-inch choke for a daily production of 275 bbls. of 43-gravity oil, with tubing pressure 1,650 pounds and casing pressure 1,750 pounds.

The new strike is considered as the most important discovery to be made in this district for several years and, according to geophysical information, the structure extends over several thousand acres. The completion opens the first production in the parish and the first Wilcox sand production in Coastal Louisiana. It is the second field to find production from this formation, although production from the Sparta, a member of the Wilcox series, has been opened at Segno, Cleveland in the Texas Coast and at Villa Platte, Tepetate and Cheneyville in Louisiana sector. These discoveries were the result of deeper drilling along the trend during the past two years which followed the opening of Wilcox sand production at the Spurger field in Tyler County, which is about 100 miles east from the new strike.

Since this well began to look favorable after logging good oil showings in both the Cockfield and Sparta sands at 6,495-6,520 feet and 7,490-7,526 feet, respectively, both capable of producing oil in commercial quantities, major and independent companies have started a large scale geophysical program along the trend. A recent survey of this work in the adjoining parishes of Allen, Beauregard, Evangeline, Livingston, Point Coupee, Rapides, Tangipahoa and Avoyelles shows a total of 18 crews operating, and this number can be expected to show an increase within the next few weeks.

The field is in Section 7-18s-3e, about 12 miles northeast of Villa Platte, Evangeline Parish, and approximately 6 miles southeast of Cheneyville in Rapides Parish. The discovery well is on a block of several thousand acres, adjoining a 10,000-acre block of Amerada Petroleum Corp. Major companies holding protection acreage include Gulf Oil Corp., Tide Water Associated Oil Co., Sun Oil Co., Magnolia Petroleum Co. and Stanolind Oil & Gas Co.

In the Lake Long field, La Fourche Parish, Fohs Oil Co. cemented 7-inch casing in No. 7 State Lake Long at 9,928 feet, preparatory to testing a new sand logged on an electrical survey at 9,768-9,804 feet. The well is a quarter-mile east of production and the 9,400-foot sand found in the other wells was absent. The hole is bottomed at 10,248 feet.

In Terrebonne Parish, Texas Co. No. 1 Continental Land & Fur Co., Section 29-18s-14e, is drilling in shale below 12,432 feet, and continues to show gas. This well is looked upon as another discovery as it has attempted to blow out on several occasions below the 11,000-foot horizon.

Union Producing Co. No. 1 Thomas, 1 mile southwest of the Woodlawn field, was drilling below 9,700 feet, and loomed as a dry hole. Offsetting the company's No. 1 Miller, location was made for No. 4 Calcasieu National Bank in Section 12-9s-6w. In the same parish and in the South Roanoke field, Continental Oil Co. is rigging up a second test, No. 2 Joe Sturdivant, center of the SE NW quarter of Section 36-10s-4w.

Location for another test was made in the Chalkley field, Cameron Parish, by Humble Oil & Refining Co. The well is on the Cameron Parish School Board lease, Section 16-12s-6w, about 1 mile south of the discovery, and 2 miles southeast of the company's No. 1 Sweet Lake Land & Oil Co., a recent dry hole. The discovery well was completed in November as a distillate producer through perforated casing at 8,562-68 feet.

Humble Oil & Refining Co. No. 3 Habetz, Section 45-8s-1e, 1,000 feet east of production at North Crowley, Acadia Parish, tested salt water through perforated casing at 8,575-77 feet, and the hole has been plugged to 8,240 feet to test through perforations at 8,198-8,203 feet. Offsetting this well to the north, location was made for No. 4 Anton Ohlenforst.

In Orleans Parish, W. T. Burton abandoned No. 2-B Faubourg de Montluzin at 10,680 feet, and the same operator is cutting and pulling stuck drill stem in No. 1 State, in Lake Pontchartrain. Location for No. 2 L.&N.R.R. was abandoned, while location for No. 3 L.&N.R.R. was reported. The rig from the abandoned hole is being moved in for No. 1 L.&N.R.R. in Section 18-11s-15e.

Along the Texas Coast, production tests were being made on two promising wildcats in Orange and Colorado counties. On the Echo prospect, Orange County, Sun Oil Co. No. 1-A Lutcher Moore Lumber Co., B. Johnson Survey, was plugged back from a sidetracked depth of 9,664 feet to 9,020 feet, and the casing was perforated at 8,995-9,010 feet. This well has attempted to blow out several times and is expected to be completed as a gas or distillate producer.

In the Garwood area, Colorado County, Coyle & Concord cemented casing at 6,004 feet in No. 4-B Powell, drilled to a total depth of 6,158 feet. The casing is expected to be perforated at 5,900-29 feet, where it showed 500 pounds of working pressure and 150 feet of oil-cut drilling mud. Several attempts to establish oil production in this gas area failed.

Humble Oil & Refining Co. No. 1 Failor, in the northeast extension area of the Lovells Lake (Cheek) field, Jefferson County, is bottomed at 7,740 feet with 5½-inch casing cemented on bottom. An electrical survey showed sand in the bottom of the hole may carry salt water, and the company will perforate upward from the bottom in an attempt to establish the water level for the field. Sand with broken shale streaks was cored at 7,720 feet to the bottom. This will be the third producer in this area, which is 1½ miles north of the discovery well.

In the old Batson field, Hardin County, and on the west flank of the dome, Jordan Drilling Co. No. 1 McLean topped the deep sand at 5,399 feet and is running casing after coring to 5,469 feet. Location for another deep test was made by Seaport Oil Corp. No. 1 Jordon and others in the W. Donaho Survey.

In the Cedar Point field, offshore from Chambers County in Galveston Bay, Standard Oil Co. of Texas and others No. 35-118 State is bottomed in salt water sand at 6,025 feet, and casing is cemented for completion. The Frio formation was topped at 5,920 feet, with sand and shale showing gas logged at 5,925-65 feet, and sand and shale showing oil and gas at 5,969-6,005 feet.

Operators interested in the League City field development in Galveston County were watching progress of Phillips Petroleum Co. No. 1 Doctor Patton, one-half mile northeast of production, which is drilling below 10,028 feet, in search of a deeper sand. George Echols No. 1 Maco Stewart, in the west extension area, is coring sand below 9,245 feet. Water sand was cored at 8,922-9,185 feet and sand with an oil odor was recovered in a core at 9,238-42 feet, and 2 feet of sand with an oil odor and salty taste was recovered at 9,242-94 feet.

In the Clear Lake field, Harris County, Stanolind Oil & Gas Co. No. 1 Sowden made a 15-minute drill-stem test at 5,848-61 feet, and recovered 3,420 feet of salt water. The perforations were squeezed off and the well was completed as a gas well through perforated casing at 5,815-25 feet. This test is a west offset to the discovery well in the James Lindsey Survey.

Locations for two wildcats were reported in Brazoria and Fort Bend counties. On the Bryan Mound dome, Brazoria County, Texas Co. is moving in for No. 6 Freeport Sulphur Co. in the C. Ariola Survey, while in Fort Bend County Grisso Royalty Co. is moving in material for No. 1 Amelia Smith, a projected 6,000-foot Frio test located in the Moses Shipman Survey, 2 miles west of Ariola.

In the Ace field, Polk County, Peyton Brothers No. 3-B Kirby Lumber Co., a projected 8,000-foot Wilcox sand test, topped the Cook Mouutain formation at 6,074 feet and is drilling ahead in shale below 7,148 feet. This is the first deep test in the field, which produces from the upper Cockfield formation.

Three new tests were getting under way in the Eureka field, Harris County. On the northeast side, within several hundred feet of the Houston city limits, Housh & Thompson spudded No. 1 W. T. Helberg, while on the northwest and southwest side Jack Frazier has started drilling No. 3 Emma Helberg and No. 2 Laura Lackner.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Hastings field: Humble Oil & Refining Co. No. 8 Law, perforated casing 6,048-78 feet, 535 bbls., quarter-inch choke; No. 12 South Texas Grain Co., 6,158 feet, abandoned.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 7 Marshall, 7,085 feet, 623 bbls., quarter-inch choke; No. 38 Middleton sand 7,047-85 feet, 656 bbls., quarter-inch choke. Cotton Lake field: Salt Dome and others No. 2 Lawrence, sand 6,474-83 feet, 132 bbls., quarter-inch choke.

Galveston County

Dickinson field: Coast Petroleum Co. No. 12 Stewart, sand 9,004-29 feet, 291 bbls., three-sixteenths inch choke. Humble Oil & Refining Co. No. 9 Stewart, 8,840 feet, 717 bbls., quarter-inch choke. Pure Oil Co. No. 1 Burger, 9,041 feet, abandoned.

Harris County

Bammel field: H. M. Lawrence and others No. 1 Ehrhardt, perforated casing 6,173-81 feet, gas well. Eureka field: Jack Frazier No. 6 Hogg, perforated casing 7,702-12 feet, 551 bbls., quarter-inch choke; No. 5 Vollmer-Neiman, perforated casing 8,028-58 feet, distillate well. Fairbanks field Amerada-Stanolind Oil & Gas Co. No. 7 Mills, perforated casing 6,845-51 feet, 144 bbls., eighth-inch choke; No. 3 White, sand 6,821-51 feet, 152 bbls., eighth-inch choke. Skelly Oil Co. No. 4 Emmott, sand 6,800-40 feet, 124 bbls., eighth-inch choke. H. E. Williams No. 3 Deacon, sand 6,820-53 feet, 601 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 1-B Humble-West, sand 5,618-6,044 feet, 576 bbls., quarter-inch choke; No. 4 West Production Co. sand 5,726-6,039 feet, 605 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 7 Kuehn, sand 5,567-72 feet, 536 bbls., quarter-inch choke.

Jefferson County

La Belle field: Sun Oil Co. No. 4 Broussard-Hebert, perforated casing 8,525-8,640 feet, 20 bbls. distillate.

Liberty County

Hardin field: L. W. Wickes No. 4 Tullos, sand 7,615-36 feet, 508 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 10-A Partlow, sand 7,597-7,612 feet, 421

(Continued on Page 231)

Extension in Seminole Pool and One in Keystone Field

By D. H. STORMONT

FORT WORTH, Tex., Jan. 23.—Completion of two extension wells in the Seminole pool of Gaines County and a mile extension to the Keystone pool of Winkler County, marked the week's development in the West Texas district. The West Central Texas area was highlighted by activity in Jones County new Griffin (Avoca townsite) pool and the launching of drilling campaigns for two other new West Central Texas oil areas.

A quarter-mile west extension was given the northwestern edge of production in the Seminole pool of central Gaines County by Atlantic Refining Co. and Osage Drilling Co. No. 1 J. L. Tippett. The well, a quarter mile due west of Osage and Frick No. 1 Riley, which extended the pool 3½ miles northwest, is shut in for storage after 234 bbls. of oil in six hours. Total depth is 5,193 feet in lime. It is in Section 266, Block G, W.T. Survey. Another edge test to the area was completed for a flow of 425 bbls. of oil in 12 hours through casing with drill pipe in the hole. The well is Amerada Petroleum Corp. No. 2 Riley, northwest edge test to the pool proper. It was deepened to its present total depth of 5,224 feet after only 32 bbls. of oil was tested in 10 hours at a depth of 5,167 feet.

Other interest in the North Basin area centered on a six-well drilling program for the north end of the Denver pool in southern Yoakum County. Don Danvers has obtained a farmout from Amerada Petroleum Corp. on the south half of the east 480 acres of Section 766, Block D, Gibson Survey. The farmout carried obligation to drill six wells, with Amerada retaining a three-sixteenths override on gross production and all rights below 6,000 feet. Danvers has staked the first test as his No. 1 Clawater, 660 feet from the east and south lines of the section.

Southern Basin

Extending the Keystone pool of Winkler County 1 mile north, Sid W. Richardson No. 1 Sun-Jenkins, Section 4, Block 77, P.S.L. Survey, was reported to be heading an estimated 150 bbls. of oil daily after cleaning out at 3,470 feet. The well had been plugged back from 3,495 feet and a 300-quart shot given from 3,360 feet to 3,485 feet.

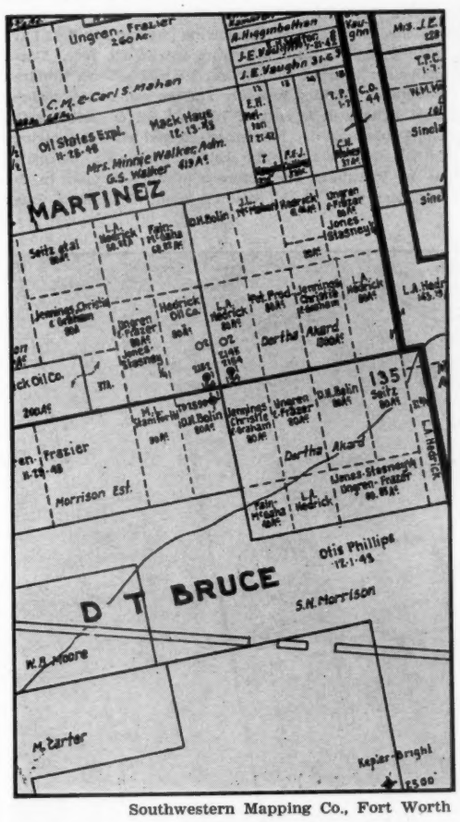
In Ector County the Foster pool got a new south edge completion and a new test in the same area. A flow of 1,551 bbls. of oil the first 20 hours of Railroad Commission gauge was reported for Hilton Oils, Inc., No. 3 Wichter, most southern producer in the western portion of the pool. Located in Section 24, Block 34, T.&P. Survey, the well has been shot with 625 quarts from 4,090 feet to 4,170 feet, total depth. Seeking again to spread production in the south part of the pool, Stanolind Oil & Gas Co. located its No. 16-B Cowden in the southeastern part of Section 14, Block 43, T.&P. Survey.

In the Dunes pool of Crane County an official gauge of 352 bbls. of oil daily was given Standard Oil Co. of Texas No. 1-5 State, half-mile northwest extension brought in last week. The well is about a quarter mile east of Standard No. 1-6 University, completed for an initial of 370 bbls. per day to extend production a half mile to the northwest.

WEST CENTRAL TEXAS

Jones County again held attention of operators in the West Central Texas area as the Griffin (Avoca townsite) pool got its sixth producer and three new tests to start. The Akard pool, discovered the week following the Griffin pool discovery some five weeks ago, got four new locations by L. A. Hedrick, who opened the pool.

Sixth producer for the Griffin pool in northeastern Jones County has been assured by Iron Mountain Oil Co. and Humble Oil & Refining Co. No. 2 Taylor, in the northwest corner of the west 60 acres of Section 199, B.B.B.&C. Survey. The test topped the Palo Pinto lime, producing horizon for the pool, at 3,211 feet with saturation at 3,215 feet, where casing has been cemented. Bert Fields No. 1 Humphrey, northeast corner of Section 22, H.&T.C. Survey, and the southernmost test in the field, has been spudded. Ungren & Frazier have skidded the rig from their No. 1 Culwell and are preparing to spud in No. 2 Culwell, Section



Southwestern Mapping Co., Fort Worth

The newly discovered Akard pool of Jones County is showing considerable development despite a dry hole on its southern borders

21, H.&T.C. Survey. Same operators have staked location for another test just east of their discovery well in the area and on the Griffin lands of Section 199.

The first Railroad Commission hearing held regarding drilling and spacing in this new pool resulted in a postponed session due to lack of land and royalty owners' testimony. The hearing developed into a spacing argument, operators being divided on whether 10- or 20-acre spacing would be most feasible.

In the Akard pool of southern Jones County, L. A. Hedrick of Wichita Falls has staked four new tests on the Morrison ranch. The area was recently opened by the operator when he completed his No. 1 Akard, Martinez Survey, for 140 bbls. of oil daily from around 2,150 feet. Hedrick's locations included his Nos. 2 and 3 Akard and Nos. 2 and 3 Morrison. The operator has two completed wells in the pool, including the discovery.

With Scurry County activity spurred by the establishment of a 183-bbl. potential for Callahan No. 1 First National Bank of Snyder, five new locations have been staked in the county's new Ira pool. The well, in the northwest quarter of Section 129-97, H.&T.C. Survey, is a diagonal offset to the discovery, Coffield & Guthrie No. 1 Spears & Brownfield. Drilling was reported started on two of the locations, one by Coffield & Guthrie as their No. 1-A Snyder Bank and at Yarbrough & Wheeler No. 1 W. H. Sterling, in Section 129 and 140, respectively. Paul Teas has a location staked on the Thompson lands of Section 129-97 and Obie Bristow and J. T. Brooks will drill their No. 1 Bank of Snyder in the same section.

Possibility of a new 3,800-foot oil pool in the extensively explored area of eastern Young County was at the Brader & Groves No. 1 Mrs. S. A. Clark. The test is in the C. Newhouse Survey, Abstract 1814, about 5 miles southeast of Belnap. Oil sand was logged from 3,849-65 feet and was given a 10-quart shot. Production possibility was estimated at about 100 bbls. daily.

WEST TEXAS COMPLETIONS

(24-hour tests)

Andrews County

Humble Oil & Refining Co. No. 55 J. S. Means, 4,418-4,525 feet, 776 bbls. Shell Petroleum Corp. No. 3 J. S. Means, 4,400-4,525 feet, 2,856 bbls.

Crane County

Standard Oil Co. No. 1-5 University, 3,139-3,298 feet, 352 bbls.

Ector County

Broderick & Calvert No. 14 Foster, 4,061-4,225 feet, 1,157 feet. Gulf Oil Corp. No. 151 Goldsmith, 4,175-4,203 feet, 244 bbls. Landreth Production Corp. No. 3-B Johnson, 4,133-63 feet, 968 bbls. Phillips-Pure No. 3 C. Cowden, 4,137-88 feet, 1,209 bbls. Stanolind Oil & Gas Co. No. 12 Roberts, 4,195-4,376 feet, 1,271 bbls.; No. 5 Witcher, 4,040-4,193 feet, 588 bbls. Sunray Oil Co. No. 6-D Foster, 4,149-4,239 feet, 231 bbls. Texon Oil & Land Co. No. 4 Midland National Bank, 4,190-4,338 feet, 1,560 bbls. Tide Water Oil and Atlantic Refining Co. No. 4-C T.&P. Land, 4,153-4,270 feet, 805 bbls.

Howard County

Moore Brothers No. 8-A Snyder, 2,643-2,864 feet, 1,032 bbls.

Mitchell County

Ajax Drilling Co. No. 1 Schuster, dry and abandoned at 3,508 feet.

Pecos County

J. D. Kugle, Jr., No. 2 W. C. Jackson, location abandoned.

Scurry County

W. E. Callahan No. 1 First National Bank of Snyder, 2,230-2,450 feet, 183 bbls.

Upton County

Gulf Oil Corp. No. 186 McElroy, 2,648-2,848 feet, 853 bbls.

Ward County

Edwards, Moore & Donnelly No. 1 Reynolds, 1,829-39 feet, 787 bbls. Gulf Oil Corp. No. 112 Estes, 2,527-2,665 feet, 663 bbls.; No. 113 Estes, 2,572-2,661 feet, 398 bbls. No. 117 Hutchins, 2,505-2,777 feet, 350 bbls. Humble Oil & Refining Co. No. 1 Richter, 2,830-2,930 feet, 395 bbls. Ohio Oil Co. No. 2 Johnson, 2,020-70 feet, 68 bbls.

(Continued on Page 238)

Southwest Texas District

By
F. L. SINGLETON

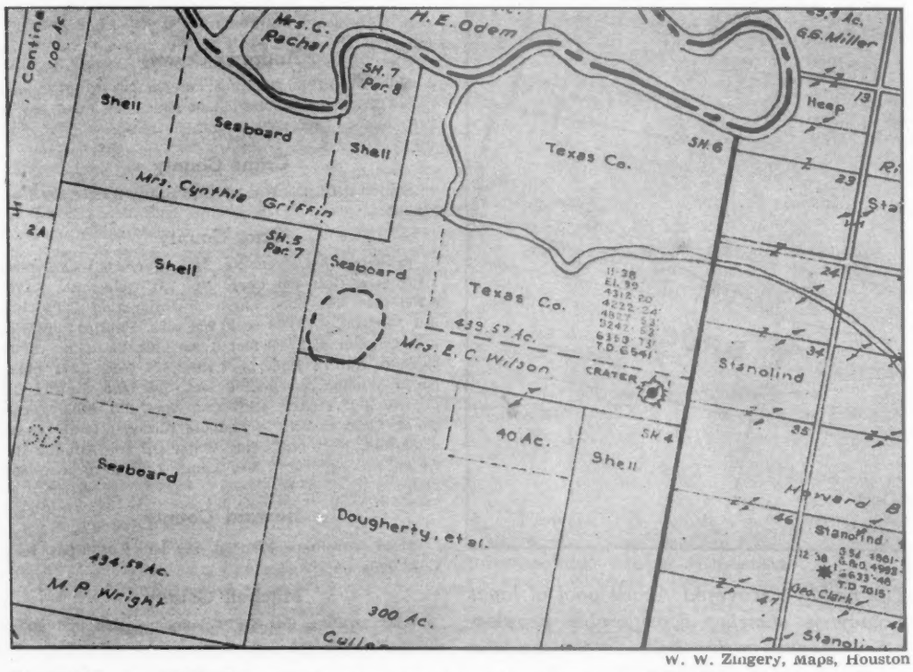
Oil Found in Test to West of the Riverside Gas Field

CORPUS CHRISTI, Tex., Jan. 23.—The recovery of oil on a drill-stem test in an outpost 4,000 feet west of the discovery well of the Riverside gas field, Nueces County, and testing of several important wildcats, held attention of operators in Southwest Texas.

Seaboard Oil Co. No. 2 Wilson, 8 miles northwest of Robstown, and west of the company's No. 1 Wilson, which blew out and cratered several weeks ago to open the Riverside field, made a 10-minute drill-stem test at 4,985-96 feet, and showed 410 pounds of working pressure and 150 feet of 33-gravity oil. The hole was cored to 5,035 feet and was being reamed preparatory to making another test. The well is in the Nueces County Winter Garden subdivision, approximately 1½ miles northwest of Stanolind Oil & Gas Co. No. 1 George Clark, 3,000 feet southwest of the cratered hole, which was completed as a gas well through perforated casing at 4,888-93 feet.

Two wildcats have been started. Southwest of Stanolind Oil & Gas Co. No. 1 Clark, approximately 1½ miles, Republic Natural Gas Co. is rigging up for No. 1 J. C. Robertson, Jose Vicente Lopez de Herra grant, while a half mile southwest, Heep Oil Corp. and others No. 1 T. W. Smith in the same survey was spudded.

On the eastern edge of the old White Point gas field, J. B. Cage and others No. 1 Dunn was coring deeper after a five-minute drill-stem test at 4,922-61 feet, recovered 600 feet of salt water and no oil with a slight blow of gas. Soft sand with a showing of oil was cored at 4,955-61 feet. Several attempts to establish oil production on the west side have been made, but all were failures. One mile southwest of East Plymouth field, Nueces Royalty Co. is rigging up for No. 1 George H. Harries in the John Smith Survey, Lot 5, Section 37, of the Fourth Addition of the Taft Farm Lands. Northeast of Ingleside in the Rosa Teal Survey, Richardson Petroleum Co. is rigging up for No. 1 O. A. Sherwood.



W. W. Zingery, Maps, Houston

Riverside gas field, Nueces County, showing extension test of Seaboard Oil Co. No. 2 Wilson which has shown evidence of oil production on a drill stem test

Refugio

The La Rosa field, Refugio County, was being extended approximately 3,000 feet northwest by Phillips Petroleum Co. No. 1 Pawleleck Estate, Section 1, Bonnie View subdivision. The hole is bottomed at 6,525 feet and casing was cemented, preparatory to testing sand at 6,312-31 feet.

W. H. Mathews No. 1 Frances Clark, a semi-wildcat in the East Alice area, Jim Wells County, was being watched as several sands showing gas and distillate have been logged at intervals from 3,525-3,624 feet. Three drill-stem tests of the section showed several hundred pounds of working pressure and several feet of gas-cut mud. The well is east of Humble Oil & Refining Co. No. 1 Adams, a dry hole which logged several showings in this shallow sand. The well is expected to be drilled to the Vicksburg pay before a production test. In the southern part of the county, Shell Petroleum Corp. was perforating casing, preparatory to testing No. 1 Von Blucher, 2 miles northeast of La Gloria in Lucinda Vest Survey. Casing was perforated at 7,550-60 feet in a sand body that showed 120 millivolts resistivity and 35 ohms porosity on an electrical survey. Northeast of La Gloria, Magnolia Petroleum Co. No. 1 Maun, Los Olmos Loma Blanca grant, is drilling shale below 6,400 feet with no additional showings reported.

Mirando

Two shallow fields were indicated for the Mirando district. One mile north of the Ezzell field, Section 59, B.S.&F. Survey, Live Oak County, R. P. Holland and others No. 1 Bonham, cored saturation in the Government Wells sand at 1,390-97 feet, and on a 10-minute drill-stem test, recovered 150 feet of oil-cut mud. Casing was cemented for a production test. In northwestern Duval County, 3 miles southwest of the Munson pool, in McMullen County, Texas Inland Oil & Gas Co. No. 1 Adami Brothers cored oil sand in the Mirando horizon at 1,289-97 feet, and casing was cemented by completion. Locations for two shallow tests were made. One mile southeast of the Loma Novio field Interstate Minerals, Inc., No. 1 Brooker is located in the B.S.&F. Survey No. 85, while 1 mile northeast of the shallow Casa Blanca field Transwestern Oil Co. staked location for No. 16 Duval County Ranch Co. in the Pila Martinez Survey No. 368.

North of the Rincon field, eastern Starr County, D. D. Oil Co. (formerly Transwestern Oil Co.) No. 1 Dallas Joint Stock Land Bank has shown evidence of converting this structure into an important discovery as production tests have shown favorable indications. This well was drilled to 5,025 feet by Transwestern Oil Co. and was taken over by the present company which cemented 5½-inch casing at 4,346 feet. Perforations were made in the casing at 4,180-85 feet and the hole was swabbed and showed no gas or water. The casing was perforated at 4,284-94 feet and the well tested an unestimated amount of dark-colored distillate through a quarter-inch choke with tubing pressure 1,350 pounds and casing pressure 1,150 pounds. At the close of the week, the well had been killed and preparations were made to test a third sand at 3,935-60 feet. The well is on a large block that has been worked extensively by geophysical instruments.

Another dry hole was marked up in the Kelsey field, Jim Hogg County, as Humble Oil & Refining Co. quit No. 5 Kelsey Bass at 4,771 feet. The well is midway between Nos. 2 and 3 Bass in the San Raphael grant, which is expected to shift development east of the discovery well as production was recently defined on the west side by a dry hole.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Corpus Christi District

Aransas-San Patricio Counties

McCampbell field: Corgey & Grote No. 1 Dinsmore and Scrivner, perforated casing 7,119-26 feet, 240 bbls., three-sixteenths inch choke; No. 2 Gustafoson and Young, perforated casing 7,120-30 feet, 180 bbls., three-sixteenths inch choke; No. 1 McCampbell, perforated casing 7,125-35 feet, 200 bbls., three-sixteenths choke; No. 1 Scrivner, perforated casing 7,121-29 feet, 210 bbls., three-sixteenths inch choke; No. 2 Tedford, perforated casing 7,130-35 feet, 175 bbls., three-sixteenths inch choke. Graham Oil Co. No. 2 Moore, perforated casing 7,122-26 feet, 493 bbls., three-sixteenths inch choke; No. 1 Hoffman, perforated casing 7,129-33 feet, 250 bbls., three-sixteenths inch choke.

Calhoun-Victoria Counties

Heyser field: Barnsdall Oil Co. No. 3 Traylor, sand 5,465-78 feet, 108 bbls., 13 hours, nine-sixty-fourths inch choke. McFaddin field: Barnsdall Oil Co. No. 13 McFaddin, 4,413 feet, 75 bbls., jetting with gas.

Jim Wells County

South Alice field: Armoil Production and Henshaw Brothers No. 1 Martens, 5,495 feet, 22 bbls., eighth-inch choke.

Nueces County

Clara Driscoll field: Houston Oil Co. of Texas No. 2 Koemel, perforated casing 5,312-24 feet, 171 bbls., three-sixteenths inch choke. Reed No. 3 Roper, perforated casing 5,602-06 feet, 48 bbls., five-thirty-seconds inch choke. Luby field: Stanolind Oil & Gas Co. No. 18

Spessard, 5,068 feet, 124 bbls., eighth-inch choke. Saxet field: J. Simmons No. 2 Harrel, 4,780 feet, 68 bbls., eighth-inch choke. Sultex Oil Co. No. 9 Kocurek, sand 4,533-43 feet, 140 bbls., nine-thirty-seconds inch choke. Stratton field: Corpus Christi Corp. No. 7 Wardner, perforated casing 6,445-65 feet, 50 bbls., quarter-inch choke. West Saxet field: Carlos Oil Corp. No. 1 Vetters, perforated casing 4,037-50 feet, 72 bbls., quarter-inch choke.

Refugio County

La Rosa field: Coronado Corp. No. 6 Rooke, perforated casing 6,327-30½ feet, 174 bbls., eighth-inch choke.

San Patricio County

Plymouth field: Texon Royalty Co. No. 4 Rambo, sand 5,640-49 feet, 124 bbls., five-thirty-seconds inch choke.

Laredo District

Duval County

Casa Blanca field: Magnolia Petroleum Co. No. 17 Duval County Ranch Co., sand 1,179-83 feet, 100 bbls., jetting with gas. Driscoll field: Continental Oil Co. No. 31-A Driscoll, sand 3,391-96 feet, 132 bbls., quarter-inch choke. Eagle Hill field: Magnolia Petroleum Co. No. 14 Duval County Ranch Co., sand 1,454-60 feet, 60 bbls., jetting with gas. Fitzsimmons field: H. J. Porter and others No. 8 Driscoll, perforated casing 4,346-49 feet, 88 bbls., nine-sixty-fourths inch choke. Sun Oil Co. No. 7 Brueggemann, perforated casing 4,311-15 feet, 115 bbls., five-thirty-seconds inch choke. Hoffman field. Continental Oil Co. No. 4 Collings, 2,815 feet, 131 bbls., jetting with gas. Cox, Hamon and others No. 15 Cuellar, sand 2,819-29 feet, 75 bbls., jetting. Longhorn field: Hiawatha Oil & Gas Co. No. 6 Miller, sand 4,907-13 feet, 190 bbls., five-thirty-seconds inch choke. M. M. Miller No. 1 fee, perforated casing 4,904-07½ feet, 196 bbls., five-thirty-seconds choke. Lundell field: Humble Oil & Refining Co. No. 7-B White, sand 1,529-32 feet, gas well. Benavides field: Hiawatha Oil & Gas Co. No. 21 Parr, sand 4,736-43 feet, 155 bbls., five-thirty-seconds inch choke. Piedra De Lumbre field: Pauda Petroleum Co. No. 2 State, sand 2,076-86 feet, 183 bbls., half-inch choke. Rancho Solo field: Stewart, Nye and others No. 4-A Peters, perforated casing 1,867-73 feet, 82 bbls., pumping.

Hidalgo County

Samfordyce field: Phillips Petroleum Co. No. 1 Flores, 6,033 feet, 42 bbls., three-sixteenths inch choke.

McMullen County

Munson field: Duncan & Graham No. 12 Nueces Land & Livestock Co., sand 1,211-27 feet, 160 bbls., pumping. Ohio Fuel Supply Co. No. 2 Nueces Land & Livestock Co., sand 1,210-20 feet, 200 bbls., pumping.

Starr County

Ricaby field: Zimmerman No. 2 Wood, sand 1,730-36 feet, 225 bbls., nine-sixteenths inch choke. Sun field: Sun Oil Co. No. 3 McKinney, perforated casing 4,660-70 feet, 119 bbls., eighth-inch choke; No. 1 Montalvo, perforated casing 4,855-68 feet, 152 bbls. by heads, seven-sixty-fourths inch choke.

Zapata County

Comitas field: Gilcrease Oil Co. No. 43-B Haynes, sand 995-1,008 feet, 27 bbls., pumping. Nordan & Morris No. 1-C Haynes, sand 1,159-62 feet, 71 bbls., pumping.

San Antonio District

Bexar County

Von Ormy field: Soltner No. 2 fee, sandy shale 640-50 feet, 3 bbls., pumping.

Caldwell County

Branyon field: Camp Oil Co. No. 1 Shapman, 2,447 feet, abandoned. Salt Flat field: Martel Petroleum Co. No. 4 Smith, lime 2,702½-03 feet, 45 bbls., pumping; No. 1-C Smith 2,585 feet, 60 bbls., pumping. Nytex Group Syndicate No. 1 Bridges, 2,732 feet, abandoned.

Guadalupe County

Darst Creek field: McNeil Petroleum Co. No. 2 Malaer, 2,604½ feet, 43 bbls., pumping.

Frio County

Schattel field: Humble Oil & Refining Co. No. 2 Houston, 5,151 feet, abandoned; No. 1 Schley, 5,309 feet, abandoned.

Kendall County

Sisterdale field: E. A. Graham No. 1 Werner, 1,030 feet, abandoned.

Milam County

Rockdale field: W. A. Jones No. 1 Brown, 534 feet, abandoned.

East Texas Fields

(Continued from Page 227)

V. E. Reed, 3,587-3,615 feet, 22 bbls. Ohio Oil Co. No. 44 E. E. Moores, 3,595-3,670 feet, 26 bbls.; No. 45 E. E. Moores, 3,587-3,668 feet, 28 bbls.

Smith County—Joiner Area

Georgian Oil Corp No.. 1-D G. Cole, 3,830-33 feet, 66 bbls. Magnolia Petroleum Co. No. 15 A. T. Tyiska, 3,808-10 feet, 48 bbls. H. H. Wayoner No. 6 T. Stone, 3,789-90 feet, 13 bbls.

Gulf Coast Fields

(Continued from Page 228)

bbls., quarter-inch choke. Texas Co. No. 1 Humphrey, sand 7,599-7,663 feet, 510 bbls., quarter-inch choke.

Polk County

Segno field: Gulf Oil Corp. No. 2 Quin, 5,150 feet, 252 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 10-B Kirby Lumber Co., sand 8,080-8,195 feet, 289 bbls., quarter-inch choke.

Wharton County

Boling field: Texas Co. No. 18-A Taylor, sand 5,670-90 feet, gas well. Magnet field: Atlantic Refining Co. No. 1-B Cockburn, sand 5,528-44 feet, 132 bbls., eighth-inch choke. Pickett Ridge field: Gilcrease Oil Co. No. 2 Kubela, sand 4,688-98 feet, 108 bbls., eighth-inch choke. Withers field: Texas Co. No. 3 Broussard, 5,547 feet, 56 bbls., six-sixty-fourths inch choke.

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New York-Penna. Gas Fields

COUDERSPORT, Pa., Jan. 23.—Tnree wells were completed in the New York-Pennsylvania Oriskany sand gas fields during the past week including a possible field opener in Cameron Township, Steuben County, New York. The other completions were both gas wells. Updegraff and others completed their test on the Fred Whitney lot in Bingham Township, Potter County, for 6,500,000 cu. ft. at a total depth of 4,902 feet. Top of the Oriskany is at 4,891 feet. Clancy completed a well on the property of School District No. 5 in Woodhull Township, Steuben County, for 1,900,000 cu. ft. at 3,713 feet. This well topped the Oriskany at 3,703 feet.

The first wildcat well completed in the Oriskany sand in the northern Pennsylvania-southwestern New York area in 1939 may have resulted in the opening of the second new field in that district within a month. This well was the New York State Natural Gas Co.'s test on the Frank Boyd farm in Cameron Township, Steuben County, New York, which was completed at a depth of 3,902 feet with an initial open flow of 13,900,000 cu. ft. per day.

This well, some distance east of a wildcat completed as a dry hole previously by another company, was spudded in during the latter part of November. The surface elevation is 1,515 feet. The Tully limestone was found at 3,137-85 feet and the top of the Onondaga limestone, Oriskany caprock, at 3,871 feet. The Oriskany sand was topped at 3,891 feet or subsea 2,376 feet.

The first gas show was at 3,900 feet, 9 feet in the sand, and gauged initially 8,500,000 cu. ft. After being allowed to blow off, a gauge was again taken, the second reading being 13,900,000 cu. ft. The initial rock pressure was 1,880 pounds. The well was bottomed at 3,902 feet.

This well is in Section D of the Woodhull quadrangle, 4,900 feet from the north line and 5,150 feet from the east line. It is 1,050 feet from the east line of the Frank Boyd farm and 301 feet north of the bordering road.

Locations were staked last week for two more tests in the area about the Sharon Township wildcat in Potter County, Pennsylvania, completed for 17,000,000 cu. ft. a month ago. These are the Belmont Quadrangle Drilling Co. No. 2 on the Wolcott farm and Sylvania Corp. No. 1 on the Elmer Kemp farm. The Allegany Gas Co. is drilling at 1,645 feet on the Dickerson farm and New Penn Development Co. is rigging up on the Gorton-Kemp farm, Empire Producing Co. on the F. Dickerson farm and G. L. Cabot, Inc., on the Plank School farm.

Other operations in Potter County are in Sweden Township where Evjen, Harris and others are shut down at 1,100 feet on the A. R. Mitchell farm, in Allegany Township where G. L. Cabot, Inc., is drilling at 723 feet on the William Cobb farm, in Harrison Township. Penn York is drilling at 2,700 feet in the No. 2 Lena Barnes, and in Bingham Township where New York State Natural Gas Co. is rigging up on the F. McCarthy farm and Sylvania Corp. is rigging up on the Harrison farm for its No. 2.

Two other operations are under way in northern Pennsylvania, both in McKean County. New Penn-McKean is drilling at 3,296 feet on the No. 1 Glenn Taylor in Ceres Township and Penn Brad Oil Co. is drilling at 3,170 feet on Warrant 5574 in Hamilton Township.

Illinois Fields

(Continued from Page 213)

In St. Clair County O'Meara and others No. 1 Tarlton, SW cor. NW SW Section 27-1n-10w, Trenton lime top at 492 feet, pay at 492-96 feet, total depth 530 feet, acidized with 1,000 gallons, pumped 75 bbls.

72 New Operations

Only five new wildcat operations were started, but one belated first report from Tazewell County was listed. Altogether 72 new operations were begun, most of them in the Salem and Louden fields in Marion and Fayette counties.

In McLean County, Oil Well Drilling Co. No. 1 Daubman, SW NE NE Section 33-22n-2e, rigging up standard tools.

In Tazewell County Hopedale Oil & Gas Co. No. 1 Tutwiller, C SW SW Section 2-22n-3w, shut down at 2,310 feet. St. Peter sand was topped at 2,139 feet. No. oil showing was reported.

In Wabash County Taylor Drilling Co. No. 1 Schafer, SW SW SE Section 28-1n-12w, of second principal meridian, derrick.

In Christian County Oil Development Co. No. 1 Post, SE SW NW Section 1-14n-1w, derrick.

In Jefferson County Anderson and others No. 1 Peoples, SW SW NE Section 14-1s-1e, drilling at 1,330 feet.

In Wayne County Ivan Allen No. 1 Horton, SE SE SE Section 13-3s-9e, spudded.

In Jefferson County Palacine Oil Co. No. 1 Ireland Steel Co. C SE NE Section 29-4s-2e, rotary on the ground.

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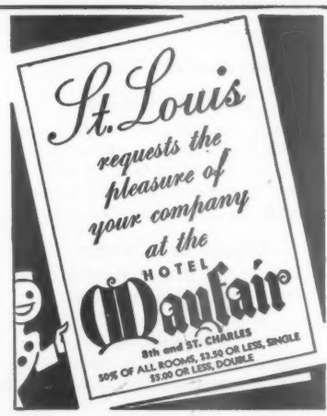
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Rocky Mountain Area

By
T. R. INGRAM

Second Lovington Oil Well Offsets Two Gas Producers

DENVER, Colo., Jan. 23.—The Lance Creek field in Wyoming was extended nearly a mile to the south in Adams Oil & Gas Co.-Felmont Corp. No. 1 Baker, which looks like a good well in the Leo sand. The Sinclair-Wyoming Oil Co. No. 4-C Mahoney, in Carbon County, made 30 bbls. natural initial production. Wyoming had one location, Colorado had none, and Montana had three new operations. The Nadeau Brothers well in North Cut Bank had 21 feet of dry Moulton sand, a show of oil in the Sunburst and water in the Cut Bank.

NEW MEXICO

A second oil producer was near completion in the new Lovington area, Lea County, at Amerada Petroleum Corp. No. 1-LA State, C SE SW Section 1-17-36, diagonal northwest offset to the discovery gas well in the area. The No. 1-LA State was giving official rating of 594 bbls. of oil daily after it had been acidized with 1,000 and 2,000 gallons. Location is 2 miles south of Skelly Oil Co. No. 1-N State, C NW NE Section 36-16-36, discovery oil well in the district.

The Amerada well was bottomed at 4,813 feet in lime. It swabbed 2.7 bbls. of oil an hour naturally through 2-inch tubing set at 4,727 feet. After first acid treatment, production increased to 10 bbls. an hour on swab. Second acid treatment increased yield to 118 bbls. on swab in 10 hours, and it then was shut in for three hours to build up pressure. When opened, it flowed 37 bbls. of 37-gravity oil in one and one-half hours, accompanied by an estimated 200,000 feet of gas. The 594-bbl. rating was based on this test. Best pay zone was at 4,700-10 feet, with porosity and oil stainings at 4,664-4,752 feet and 4,760-72 feet.

Stanolind Oil & Gas Co. No. 1 State, C SW SE Section 1-17-36, direct east offset to the Amerada well, failed to find oil production and swabbed dry after acidizing with 3,000 gallons at 4,980 feet. It checked 44 feet higher on St. Andreas lime than the Amerada well but found the lime nonporous and barren. It had a slight showing of oil in samples at 4,650-55 feet. Operators plugged back to 4,195 feet, perforated casing from 3,891 to 3,911 feet in a red sand zone which had shown an estimated 30,000,000 cu. ft. of gas when drilling. After perforating, gas measured 7,000,000 cu. ft. but an official gauge had not been taken. It was due to be completed as a gas well in order to hold lease.

The Skelly company's oil discovery well, No. 1-N State, C NW NE Section 36-16-36, was shut in to build up pressure. Two and one-half inch tubing was replaced with 2-inch tubing, with packer set at 4,350 feet and perforations at 4,678-84 feet. On a recent test it flowed 99 bbls. of 37.1-gravity oil in 23 hours through 18/64- to 23/64-inch tubing chokes. Total depth was 5,012 feet.

Southeastern New Mexico completions of the past week included nine wells in Lea County and one in Eddy County, as follows:

Gulf Oil Corp. No. 5 Stuart, C NE NE Section 10-25s-37e, Langlie area, was completed at a total depth of 3,435 feet. Pay was found at 3,340 feet and after shooting the well flowed 148 bbls. of oil in seven hours.

Repollo Oil Co. No. 1 State, 157-C, SW SW SE Section 32-24s-37e, flowed 96 bbls. of oil in eight hours naturally through open 2-inch tubing set at 3,523 feet. Top of pay was 3,498 feet, total depth 3,545 feet.

Olean Petroleum Co. No. 2 Brunson, SW NE SE Section 4-22s-37e, Hardy pool, found pay at 3,685-95 feet and 3,708-12 feet and flowed 10 bbls. of oil hourly through open 2-inch tubing set at 3,721 feet. Gas gauged 1,500,000 cu. ft.

Standard Oil Co. of Texas No. 2 State Lease 3, C NW NW Section 32-17s-35e, Vacuum field, was bottomed at 4,651 feet, topped pay at 4,357 feet and flowed 20 bbls. of oil per hour.

Phillips Petroleum Co. No. 13 Santa Fe, C NW NW Section 28-17s-35e, total depth 4,695 feet, topped pay at 4,265 feet and flowed 125 bbls. of oil in 24 hours, with very little gas.

Shell Petroleum Corp. No. 1-S State, C NE SE Section 21-17s-35e, pumped 32 bbls. of oil daily from pay found at 4,435 feet. Total depth was 4,745 feet.

The Texas Co. No. 3-R State, C SE NE Section 6-18s-35e, found pay at 4,350 feet, was bottomed at 4,710 feet, and flowed 40 bbls. of oil in eight hours.

Same company's No. 4 Black, C SE NW Section 21-24s-37e, flowed 183 bbls. of oil in 18 hours through three-quarters inch choke on 2-inch tubing set at 3,565 feet. Pay was topped at 3,477 feet, total depth 3,565 feet.

Italo Petroleum Corp. No. 1 Carlson A-23, NW NW SW Section 23-25s-37e, total depth 3,345 feet, topped pay at 3,258 feet and after shooting at 3,242-3,308 feet flowed 10 bbls. of oil hourly.

In Eddy County, Carper Drilling Co. No. 3 Robinson, SW SW SE Section 25-16s-31e, was completed at 4,040 feet, total depth, and swabbed 50 bbls. of oil daily. Top of pay was found at 3,690 feet.

Lea County

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Sec. 33-16-36. S.D.O. 4,997 ft.
Repollo Oil Co. No. 1 State, Lease 182, C S½ SE SW Sec. 31-16-37. S.D.; repairs 4,515 ft.
Skelly Oil Co. No. 1-N State, C NW NE Sec. 36-16s-36. T.D. 5,012 ft.; F. 99 B.O. in 23 hrs.; rng. tbg.
Amerada Pet. Corp. No. 1-LA State, C SE SW Sec. 1-17-36. T.D. 4,813 ft.; S.O.
Continental Oil Co. No. 1-A Sanderson B-14, C N½ NW NW Sec. 14-20-36. W.O.C. 1,443 ft.
Continental Oil Co. No. 1 State H-34, C SE SE Sec. 34-17-34. Drlg. 2,192 ft.
Continental Oil Co. No. 4 State H-35, C SE NW Sec. 35-17-34. Drlg. 4,191 ft.
Continental Oil Co. No. 5 State H-35, C SW NE Sec. 35-17-34. C.&P.
Drilling & Exploration Co. No. 1-B State, C S½ SE NW Sec. 22-17-35. T.D. 4,690 ft.; to test.
Humble O. & R. Co. No. 2-J State, C NW SW Sec. 19-17-35. Drlg. 4,605 ft.
Humble O. & R. Co. No. 1-K State, C SE SE Sec. 28-17-35. Drlg. 1,572 ft.
Humble O. & R. Co. No. 2-K State, C NW NE Sec. 32-17-35. Drlg.
Magnolia Pet. Co. No. 4-M State, C SE NW Sec. 34-17-35. Drlg. 2,285 ft.
Magnolia Pet. Co. No. 2-J State, C NW SE Sec. 22-17-34. W.O.C. 820 ft.
Magnolia Pet. Co. No. 22 State-Bridges, C SE SW Sec. 24-17-34. Drlg. 4,648 ft.
Magnolia Pet. Co. No. 23 State-Bridges, C NW SW Sec. 24-17-34. Drlg. 3,670 ft.
Magnolia Pet. Co. No. 24 State-Bridges, C SW SW Sec. 13-17-34. Drlg. 2,850 ft.
Maljamar O. & G. Co. No. 1-B Baish, C NE NW Sec. 22-17-32. T.D. 4,157 ft.; P.B. 3,527 ft. and S.D.
Maljamar O. & G. Co. No. 2-B Baish, C NE NE Sec. 27-17-32. Drlg. 1,780 ft.
Maljamar O. & G. Co. No. 1-B Mitchell, C NE SE Sec. 20-17-32. T.D. 3,591 ft.; W.O.S.T.
Maljamar O. & G. Co. No. 6 Mitchell, C SW NE Sec. 20-17-32. T.D. 3,600 ft.; C.O. 3,420 ft.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. Rng. csg. 4,110 ft.; F. 15 B.O.P.D.
Ohio Oil Co. No. 4 State-McCallister, C NW SW Sec. 25-17-34. Drlg. 4,056 ft.
Ohio Oil Co. No. 2 State-Staplin, C NE SW Sec. 30-17-35. C.&P.
Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. T.D. 4,700 ft.; C.O. at 4,646 ft.
Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. T.D. 4,700 ft.; C.O. 4,670 ft.
Phillips Pet. Co. No. 18 Santa Fe, C NW NE Sec. 34-17-35. Cmtg. 4,195 ft.
Phillips Pet. Co. No. 19 Santa Fe, C NW NE Sec. 35-17-35. T.D. 4,780 ft.; P.B. 4,687 ft.; S.D.O.
Phillips Pet. Co. No. 20 Santa Fe, C SW SW Sec. 27-17-35. C.&P.
Phillips Pet. Co. No. 21 Santa Fe, C NE NE Sec. 33-17-35. R.U.R.
Phillips Pet. Co. No. 22 Santa Fe, C NW SW Sec. 26-17-35. Drlg. 4,240 ft.
Repollo Oil Co. No. 2 State, Lse. 197, SE NE SE Sec. 6-17-34. Drlg. plug 1,580 ft.
Shell Pet. Corp. No. 1-C State, C NE SE Sec. 24-17-34. Drlg. plug 4,350 ft.
Shell Pet. Corp. No. 1-V State, C NE SE Sec. 21-17-35. Rng. tbg. 4,680 ft.
Shell Pet. Corp. No. 2-V State, C SE SE Sec. 27-17-35. W.O.C. 4,350 ft.
Standard Oil Co. of Texas No. 3 State, Lse. 3, C NE NW Sec. 32-17s-35. Loc.
Standard Oil Co. of Texas No. 4 State, Lse. 4, C NW SW Sec. 27-17-35. Drlg. 3,160 ft.
Stanolind O. & G. Co. No. 1 State, C SW SE Sec. 1-17-36. T.D. 4,980 ft.; acdg. and swbg.; to test.
Texas Co. No. 1-T State, C SE NE Sec. 25-17-34. T.D. 4,725 ft.; S.I.
Twin Oil Corp. No. 1-D State, C SW NE Sec. 30-17-35. T.D. 4,700 ft.; acdz. and F. 102 B.O.P.D.
Fullerton Oil Co. No. 1-A Walker, C SW NW Sec. 18-18-32. Fsg. 830 ft.
Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. T.D. 4,750 ft.; C.O. 4,630 ft.
Shell Pet. Corp. No. 2 Foster, SE SW SE Sec. 34-19-36. Drlg. 3,095 ft.
Continental Oil Co. No. 2 Britt B-10, C W½ NW SW Sec. 10-20-37. Drk.
Continental Oil Co. No. 4 Britt B-15, NW SW SW Sec. 15-20-37. Drk.
Continental Oil Co. No. 1-A Sanderson, C N½ NW NW Sec. 14-20-36. T.D. 3,825 ft.; F. 16 B.O.P.D.
J. M. Rush No. 3 State A-20, NW SW SE Sec. 20-20-37. T.D. 3,842 ft.; F. 3½ B.O.P.H.
J. M. Rush No. 4 State A-20, NW SE SE Sec. 20-20-37. Loc.
Texas Co. No. 16 Lieu-Lands, C NE SW Sec. 20-20-37. Drlg. 1,100 ft.
Aloco Oil Co. No. 1 Carson, C SW SW Sec. 28-21-37. T.D. 3,560 ft.; fsg. bit.
Cities Service No. 1-M State, C SW SW Sec. 36-21-36. W.O.C. 3,715 ft.
Magnolia Pet. Co. No. 1 Marshall, C SW NW Sec. 34-21-37. Drlg. 1,716 ft.
Francis C. Wilson No. 3 State, NW SE NE Sec. 7-21-35. Drlg. plug 3,640 ft.
J. C. Clower No. 1-B Manda, NE NE NW Sec. 28-22-37. T.D. 3,681 ft.; F. 60 B.O.P.D.
Dangiade & Clower No. 1-B Glier, C SE NW Sec. 33-22-37. Drlg. 2,430 ft.
Continental Oil Co. No. 4 Lockhart, B-1, C W½ SW NE, Sec. 1-22-36. Drk.
Continental Oil Co. No. 4 State J-2, C NE NE Sec. 2-22-36. Drlg. 3,685 ft.
Continental Oil Co. No. 5 State J-2, C SE SE Sec. 2-22-36. Loc.
Devonian Oil Co. No. 2 Christmas, SE SW SE Sec. 28-22-37. Abd. loc.
Olean Pet. Co. No. 2 Farrell, SW SE SE Sec. 22-22-37. Drlg. 3,310 ft.
Texas Co. No. 2-B Fally, C SE SW Sec. 8-22-37. Spdg.
Texas Pacific Coal & Oil No. 13-A State, C NE NE Sec. 11-22-36. Drlg. 1,430 ft.
Twin Oil Co. No. 1-C State, C SE NE Sec. 17-22-37. Drlg. 3,607 ft.
Two States Oil Co. No. 3-B Cole, C NE NW Sec. 16-22-37. Drlg. 3,490 ft.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; S.D.O.
Great Western Prod. No. 2-B Leonard, C NW NW Sec. 32-23-37. Loc.
R. Olson No. 1 Blinebry, C SW SW Sec. 29-23-37. R.U.R.
Montecito Oil Corp. No. 1 Woolworth, NE SE SW Sec. 33-24-37. T.D. 3,545 ft.; S.I.
North Shore Corp. No. 1 Woolworth, NE NE NW Sec. 33-24-37. Drlg. 1,880 ft.
North Shore Corp. No. 2 Woolworth, SE SE NW Sec. 33-24-37. Drlg. 1,700 ft.
Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. T.D. 3,460 ft.; tstg.
Phillips and Pure No. 4 Woolworth, C NW SE Sec. 33-24-37. W.O.C. 3,353 ft.
Phillips and Pure No. 5 Woolworth, C SW SE Sec. 33-24-37. Loc.
Schermerhorn Oil Co. No. 4 Woolworth, C NE SE Sec. 28-24-37. Drlg. 3,750 ft.
Schermerhorn Oil Co. No. 5 Woolworth, NW SW NE Sec. 28-24-37. S.D. rprs. 420 ft.
Sam Weiner No. 2 Woolworth, SW NW SW Sec. 33-24-37. Drlg. 1,510 ft.
Weir Drlg. Co. No. 3 Woolworth, NE SW SW Sec. 28-24-37. R.U.S.T.
Culbertson & Irwin No. 2 Henry, SW SE SW Sec. 26-25-37. S.D. repairs 3,116 ft.
Geo. F. Getty No. 1-G State, NW NW NW Sec. 2-25-37. T.D. 3,582 ft.; P.B. 3,500 ft.; to shoot.
Gulf Oil Corp. No. 6 Stuart, C NW NW Sec. 11-25-37. Drlg. 912 ft.
Italo Pet. Corp. No. 1 Carlson B-27, NE NW NE Sec. 27-25-37. T.D. 3,364 ft.; P.B. 3,354 ft.; C.O. 3,336 ft.
Italo Pet. Corp. No. 1 Indian Pet. Corp., NE NE NE Sec. 6-25-37. Drlg. 3,416 ft.
Italo Pet. Corp. No. 1 Indian Pet. Corp. B-5, NW NE NE Sec. 5-25-37. R.U.R.
Richmond Drlg. Co. No. 1-A State, C NW SW Sec. 2-25-37. T.D. 3,338 ft.; bit still in hole; temp. comp. as gas well with 2,724,000 cu. ft. gas; may D.D. later.
Richmond Drlg. Co. No. 2-A State, C SW SW Sec. 2-25-37. M.I.M.
Sam Weiner No. 3 Smith, C N½ NE SE Sec. 4-25-37. Drlg. 3,115 ft.

Eddy County

Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. T.D. 3,950 ft.; fsg. bit.
Fullerton Oil Co. No. 4-A Johnson, C SW NW Sec. 35-16-31. T.D. 3,950 ft.; swb. 44 B.O.P.D.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. T.D. 3,530 ft.; tstg.
Hammond & Sons No. 1 Ployhar-State, SW SW SE Sec. 16-17-28. Drlg. 750 ft.
J. O. and J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.
English & Harmon No. 1 Stogner, C NW SE Sec. 31-17-31. T.D. 3,687 ft.; S.D.O.
P. B. English No. 1 Saunders, SE SE SE Sec. 13-17-27. T.D. 460 ft.; recementing.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. Drlg. 3,290 ft.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. W.O.C. 2,850 ft.

F. G. Keyes No. 3 Red Gulch, NW NW NE Sec. 16-17-28. Drlg. 1,110 ft.
Ohio Oil Co. No. 4 State-McCallister, Sec. 25-17-34. W.O.C. 510 ft.
C. S. Powell No. 1 Smith, NW NW NE Sec. 6-17-29. Rng. csg. 1,635 ft.
Red Lake Oil Co. No. 1 State, NE NE SE Sec. 20-17-28. Drlg. 350 ft.
H. J. Steinberger No. 1 Hastie, SE NE SW Sec. 18-17-28. Drlg. 325 ft.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. T.D. 1,250 ft.; tstg.
Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. S.D.O. 380 ft.
Franklin Pet. Corp. No. 1 Ballard, NE NE SE Sec. 1-18-29. R.U. mch.
Green Bay Oil Co. No. 1-A Johnson, C SE SE Sec. 11-18-31. Drlg. 982 ft.
Paton Bros. No. 1 Erwin, C SE SE Sec. 5-18-31. Drlg. 3,393 ft.
Rhodes Drlg. Co. No. 1 Swearingan, NE SE NW Sec. 14-18-31. T.D. 3,475 ft.; pmp. 120 B.O. in 16 hrs.
Worth Drlg. Co. No. 1 Taylor, C SW SW Sec. 12-18-31. T.D. 3,600 ft.; F. 42 B.O.P.D.; tstg.
Yates et al No. 1 Yates, C NW SW Sec. 6-18-30. W.O.C. 2,874 ft.
Harvey E. Yates No. 1 Travis, NE SE SE Sec. 6-18-29. Drlg. 920 ft.
G. E. Quillen No. 1 Puryear, C NW NE Sec. 12-19-31. Drlg. 555 ft.
Geo. E. Robb No. 1 Cannon, C SW SE Sec. 4-19-30. Drlg. 200 ft.; last report.
Geo. E. Robb No. 1 Vandagriff, SW NE Sec. 6-19-31. T.D. 800 ft.; S.D.O.
R. C. Underwood No. 1 Quillen-Bruce, NE NE SE Sec. 4-19-31. Drlg. 2,433 ft.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.; tstg.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. S.D.O. 408 ft.
C. F. Ingram No 1. Page, NE NE SW Sec. 15-21-28. T.D. 2,978 ft.; fsg.
Barnett Oil Dev. Co. No. 1 King, C NW SE Sec. 23-26-30. Rng. csg. 1,468 ft.

Chaves County

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. Drlg. 1,485 ft.
E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,281 ft.; S.D.O.

De Baca County

N. E. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27-7s-35e. T.D. 5,151 ft.; P.B. 4,600 ft.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Drlg. below 1,000 ft.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. S.D. 4,450 ft.

McKinley County

S. Dysart No. 3-A Govt., NE NW NE Sec. 14-14n-10w. Cmtd. 12½-in. 1,320 ft.; 100 ft. sat.
Pet. Products Co. No. 3 Santa Fe, NE NW Sec. 1-17n-9w. Drlg. 1,500 ft.

Rio Arriba County

Oil City Pet. Co. No. 2 Wirt-Sanchez, C Sec. 12-31-2e. M.I.

San Juan County

Continental Oil Co. No. 85-A Rattlesnake, CEL SW NE Section 2-29n-19w, Rattlesnake pool, was completed in the Dakota at 842 feet for 45 bbls. per day. It flowed 61 bbls. in 16 hours through the casing while cleaning out.

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15 PLANTS TO SERVE YOU

San Juan O. & G. Co. No. 2 Cassidy, NW NW SW Sec. 18-29n-11w. Drlg. 400 ft.
Kutz Deep Test, Inc., No. 1 Govt., C NW NW Sec. 28-28n-10w. Drlg. 300 ft.
Jack Amenda No. 1 NE NE Sec. 14-29n-13w. Drlg. 625 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. Drlg. bl. sh. 830 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,885 ft.; W.O. csg.; S.O. in Farmington sd. but will D.D. to Picture Cliff.
Goodrun & Vincent No. 1 Seitzinger, SW SE NE Sec. 23-29n-11w. Spdg. 50 ft.
Ted Whetstine No. 1 McGee, NW NW Sec. 20-30n-11w. S.D. 434 ft. for mat.
Bullock & Noland No. 1 Bunce, SW SE Sec. 24-29n-1w. Drlg. 1,023 ft.

Valencia County

Joiner Oil Corp. No. 1 San Clemente, C. NE SE Sec. 23-7n-1e. Cmtd. 10-in. at 600 ft.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. Drlg. sh. 735 ft.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. T.D. 2,460 ft.; fsg. tools; through Dakota series.
Axelind Oil Co. No. 1 Sec. 11-32n-2e. Drlg. below 700 ft.

Boulder County

Reynolds & Roher No. 1 Thomas, SW SW Sec. 17-1n-70w, S.D. 300 ft.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Section 19-10s-60w, a deep test in the Denver basin, which was reported abandoned last week at 7,578 feet, had the following tops: Foxhills, 135 feet (base, approximately 1,368), Timpas 6,221 feet, Dakota series 6,647 feet, Morrison 6,928 feet, Permian (Lykens) 7,309 feet. The drill pipe was shot off at 6,600 feet, above the Dakota. Ground elevation 6,260 feet, rotary table elevation 6,277 feet.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. S.D. 2,460 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C. NE Sec. 36-7s-88w. S.D. 2,008 ft. for winter after W.S.O. with 5⅜-in. at 1,757 ft.

Huerfano County

J. W. Tomkins & Sons No. 2 Presser, SE SE SE Sec. 3-29s-69w. Drlg. 254 ft.

La Plata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 2,250 ft.; U.R. 8¼-in. at 2,100 ft.; slow progress due to heavy gas pressure.

Las Animas County

Hulme-Johnston-Allison No. 1 Azar, SE SE NW Sec. 27-34s-58w. T.D. 6,275 ft.; W.O. new drlg. line.

Logan County

West Plains Dev. Co. No. 1 Sheldon, SE NW SE Sec. 3-10s-55w. Spdg. delayed by weather.

Moffat County

Isenberg-Parker-Myers No. 1 Myers-State, NW SE NE Sec. 36-4n-103w. Drlg. 1,245 ft.; still in Webber (Tensleep).
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,145 ft.; fsg. U.R. lug.
Mackinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. S.D. 3,050 ft.; M.I. 6¾-in.

Montezuma County

McElmo Oil Co. No 1 West, NE NW NW Sec. 31-36s-17w. S.D. 4,917 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,705 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,437 ft. in White L.; prep to run 7-in.

Pueblo County

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 870 ft. for csg.
Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. S.D. 2,035 ft.

Rio Blanco County

Buford Oil Co. No. 1 Govt. C SW SW Sec. 16-1n-91w. T.D. 3,618 ft.; prep. to res.

Routt County

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. S.D. 1,790 ft.

WYOMING

Big Horn County

Frank S. Scott No. 1 Robertson, SE SE SE Sec. 6-54n-93w. Spd. to 14 ft. and S.D. to complete R.U.
Libby-Keoughan Interests No. 1 Sheets-Govt., SE NE SE Sec. 9-55n-96w. Drlg. 2,600 ft.
A. L. Rankin No. 1 Karjajla-Rankin, C SW NW Sec. 10-54n-94w. S.D. 590 ft.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. S.D. 1,190 ft.; repairs.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Spdg.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. S.D. 2,718 ft.

Campbell County

Fyre & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. Landed 5⅜-in. on bttm. at 823 ft. and S.D.

Carbon County

Sinclair-Wyoming Oil Co. No. 4-C Mahoney, CNL NE SW Section 34-28n-88w, was completed in the Tensleep at 4,505 feet after plugging back from 4,558 feet for 30

bbls. per day natural. It had the top of the Tensleep at 4,356 feet. It had water in the base of that formation. The location is a south offset to No. 3 Mahoney, which was completed at 4,486 feet for 172 bbls. per day.

Sinclair-Wyoming Oil Co. No. 2-A Mahoney Unit, C SW NE Sec. 34-26n-88w. M.I.M.

Ohio Oil Co.-California Co. No. 7 Union Pacific-Johnson, CEL NE SW Sec. 23-21n-79w. Drlg. 4,965 ft.

Producers Oil Co. No. 1 Lake Valley, 200 ft. CEL Sec. 14-20n-88w. S.D. 1,916 ft.

Converse County

Wyore Oil Co. No. 3 Gaspar, SW Sec. 25-32n-69w. Loc.

Chas. Wheeler et al No. 1 Fitzhugh, NW Sec. 19-31n-71w. S.D. 460 ft.

Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 640 ft. for csg.

Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. S.D. 2,392 ft.

Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. T.D. 483 ft.; prep. to run csg.

New Era Fuel Co. No. 2 Mary Gaspar, CNL NW SW Sec. 25-32n-69w. S.D. 670 ft. without tstg.

Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. Drlg. 2,890 ft. in Amsden.

Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. Drlg. 210 ft.

Dr. Harvey No. 1 Granville-Tinnin, NE NE SE Sec. 6-31n-69w. S.D. 275 ft.

Fremont County

Frank Pouppirt No. 1 Fidelity Tr., SW NE SW Sec. 27-3n-1w. S.D. 1,168 ft.

Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. S.D. 3,465 ft. in Lakota.

Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. S.D. 1,240 ft.

C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. S.D. 1,200 ft.; S.O. 1,095 ft.

Frank Pouppirt No. 2 NW NW SW Sec. 27-3n-1w. S.D. 1,200 ft.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. T.D. 1,096 ft.; fsg. tools.

Natrona County

General Pet. Corp. No. 2 State, NW SE NE Sec. 16-35n-77w. Drk.; foundations run.

General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 7,383 ft.; second Wall Creek sd. at 7,222-27 ft. Showed slight sat. in core.

Niobrara County

Another important extension of the Leo sand area in the Lance Creek field is imminent in Adams Oil & Gas Co.-Felmont Corp No. 1 Baker, NW NE SW Section 8-35n-65w, which looks as though it will be a producer. It is bottomed at 5,626 feet with the 7-inch at 5,590 feet. Top of the Leo zone was at 5,590 feet. After drilling plug it circulated with oil. After this oil was circulated out it failed to show any free oil. Swabbing then started and last reports were that the oil was coming in and that it was swabbing at the rate of 90 bbls. per day and increasing. Location is half a mile east and a little south of the Continental Oil Co. No. 1-B Dielman, and three-fourths of a mile southwest of the Continental's No. 2-B Dielman, the nearest producers. It will prove up at least 160 acres.

Continental Oil Co. No. 7-B Schuricht, an edge well in the Sundance, which looked doubtful last week when it swabbed 30 bbls. of fluid, 50 per cent water, at 4,010 feet, will make a nice well after plugging back to 3,938 feet to shut off bottom water. It swabbed and flowed 50 bbls. per day with no water and was increasing. At last reports it was making 5 bbls. per hour.

Ohio Oil Co. No. 1 Leo-OPC-7, NW NW SE Section 35-36n-65w, the most easterly Leo sand well in the field and half a mile out from the nearest producer, is rigging up rotary to deepen into the lower bench of that formation. It was completed late in 1937 at 5,641 feet for 13 bbls. of oil and 50 bbls. of water per day.

Ohio Oil Co. No. 1 Leo-OPC-7, NW NW SE Sec. 35-36n-65w. T.D. 5,641 ft.; R.U.R. to D.D.

Ohio Oil Co. No. 5 Rohiff, 100 ft. E of C E½ Sec. 32-36n-65w. Rig.; W.O. equip.

Continental Oil Co. No. 14 Tom Bell, C NW SW Sec. 34-36n-65w. R.U.R.

Continental Oil Co. No. 3 Apex-4, SE SW NW Sec. 35-36n-65w. Drlg. r.b. 4,512 ft.

Argo Oil Co. No. 9 Elliott, NW SE SE Sec. 5-35n-65w. T.D. 3,979 ft. in sat. sd.; 7-in. cmtd. 3,931 ft.; tstg.

Ohio Oil Co. No. 6 Leo O.P.C.-16, NW NE SW Sec. 35-36n-65w. Drlg. 5,550 ft.; red marker 5,520 ft.

Continental Oil Co. Acct. Buck Creek Oil Co. No. 7-B Schuricht, NE SW SE Sec. 6-35n-65w. T.D. 4,010 ft.; P.B. to 3,935 ft., testg.

F. F. Hintze et al No. 1 Wright-Govt., NW NW SE Sec. 30-36n-63w. T.D. 3,300 ft.; cmtg. to regain cir.

Ohio Oil Co. No. 1 Jones, SE NE SE Sec. 30-35n-62w. Drlg. 2,873 ft. in Deadwood.

J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Loc.

Cow Gulch Oil Co. No. 1 MaGoon, NE NE Sec. 33-35n-64w. S.D.O. 2,100 ft. in dolomite; Leo sd. 2,033-75 ft.

Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. T.D. 1,000 ft.; rec. collapsed pipe; rerunning 12½-in.

H. D. Moore et al No. 1 Bergrem, NW Sec. 23-35n-63w. Drlg. 1,900 ft.

Adams O. & G. Co. No. 1 Baker, NW NE SW Sec. 8-35n-65w. T.D. 5,626 ft.; tstg.

Park County

Dry Creek Oil Co. No. 1 State, C NE NW Sec. 16-50n-100w. T.D. 150 ft.; cmtd. 10-in.

E. J. Preston No. 1, SW SW Sec. 26-58n-98w. M.I.M.

Blue Ridge Co. No. 1 Mau, NE NE SW Sec. 25-58n-98w. Cmtd. 12½-in. 100 ft.; drlg. plug.

Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. T.D. 8,690 ft.; C.D.; 6⅝-in. 8,330 ft.; drlg. plug.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. S.D. 550 ft.

Sublette County

Texas Co.-Frontier Pet. Co. No. 1 Unit, SE SE SW Sec. 1-28-11w. T.D. 6,247 ft.; drlg. cmt. plug.

Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd rnh., SE SE Sec. 31-13n-112w. S.D. 10 ft.

Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. S.D. 835 ft.

Wyoming Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. 1,792 ft.; trying to kill gas.

Sweetwater County

Sinclair-Wyo. Oil Co. No. 81, SW NW NW Sec. 11-26n-90w. Drlg. 2,035 ft. with C.T.

Sinclair-Wyo. Oil Co. No. 82 NE SW SW Sec. 11-26n-90w. R.U.R. (first report.)

Uinta County

Drusilla Connell No. 6 Govt., C NW NW Sec. 24-15n-118w. Spdg. 10 ft.

Stove Creek Oil Co. No. 3 Govt., CWL SW NW Sec. 26-14n-119w. S.D. 300 ft.

Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. T.D. 1,620 ft. (C.D.) W.O. 8¼-in.

Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. Drlg. 500 ft.

Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. Drlg. 2,030 ft.

Weston County

Emil Anderson et al No. 1, Sec. 12-47n-63w. R.O.G. for test to the Sundance. Dakota at the surface.

Conway Oil Corp. No. 3 Govt., C NW SW Sec. 31-42n-60w. Drlg. 2,020 ft.

James Farrel No. 1 Govt., NE SE SE Sec. 2-44n-61w. T.D. 150 ft.; fsg. tools.

Selby & Langford No. 1, CNL NW SE Sec. 6-46n-63w. Drlg. below 300 ft.; showing for a well.

Whedon et al No. 1 Sec. 21-46n-64w. Drlg. 2,160 ft.

John Borophy No. 1 George, SW SE NW Sec. 26-48n-64w. T.D. 2,287 ft.; pulled 5⅜-in. to replace leaky joint.

Lem Johnston No. 1, NW SW Sec. 24-44n-63w. Drlg. 570 ft.

Bert Higgins No. 7, NE NE SE Sec. 5-46n-63w. Drlg. 385 ft.

MONTANA

Montana gasoline sales in November were 11,437,446 gallons, of which 8,414,401 were refined in the state and 3,017,045 were imported. Exports were 2,742,365 gallons, leaving net sales in the state 8,689,081 gallons.

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Blaine County

Walter Drought No. 1 Stam, CSL SW SE Sec. 20-31n-18e. Drlg. 950 ft. (Formerly G. R. Teeters.)

Carbon County

Shaw-Wa Petroleum Co. No. 1 Government, SW SW NE Section 35-9s-23e, on the Montana side of the Elk Basin field, which has been standing for some time at 3,123 feet, bottomed in the Morrison, has been plugged and abandoned. It was a failure in the Dakota at 3,045-60 feet.

Valentine M. Kirk et al No. 1 Robinson, SW SW NW Sec. 2-7s-21e. Cmtd. 10-in. at 2,021 ft. and S.D. until spring.

Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. T.D. 1,580 ft.; landed 6¼-in. on bttm.

R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. Drlg. 2,900 ft.; 7-in. at 2,880 ft.

Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.

Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. S.D. 2,381 ft.

Cascade County

E. B. M. Oil Co. No. 1 Betts, CSL NW SE Sec. 34-18n-4e. T.D. 1,250 ft.; prep. to res.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. S.D. 1,991 ft.; S.D. for 6⅝-in.; Sunburst 1,935-53 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,065 ft.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. Drlg. 1,928 ft.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 25-6n-60e. Drlg. 320 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,080 ft. (C.D.): in lower Quadrant.

Emmons et al No. 5 Stocker, SW NW SW Sec. 24-22n-18e. Drlg. 950 ft.

Glacier County

Nadeau Brothers No. 1 Government, a mile to the southeast of the Yukon Oil Co. No. 1 Lungren, the discovery well in the Moulton sand in North Cut Bank, has plugged off water in the bottom of the Cut Bank sand, will shoot a show of oil in the Sunburst sand. The Moulton sand was dry. Reported total depth is 2,805 feet, 20 feet in the Cut Bank, and the Sunburst at 2,725-47 feet. It had 21 feet of dry Moulton sand.

Cut Bank had one completion in Glacier Production Co. No. 4 State, CSL NW Section 16-33n-5w, at 2,908 feet. It had the Sunburst at 2,775-2,842 feet with a good show of oil at 2,800-15 feet and a good show of gas at 2,834-42 feet. The Cut Bank was at 2,890-97 feet. It was shot at 2,890-97 feet with 2 and 3 quarts and is cleaning out and testing.

Glacier Prod. Co. No. 3 O'Brien, C SW SW Sec. 32-34n-5w. Colo. 390 ft.; cmtd. 10¾-in. 410 ft.

Nadeau Bros. No. 1 Govt., NW SW NW Sec. 25-37n-5w. Colo. 498 ft.; 10¾-in. 513 ft.; drlg. depth not reported.

Glacier Prod. Co. No. 3 Neill, SE SE NE Sec. 30-33n-5w. Drlg. 2,920 ft.

Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Colo. 565 ft.; cmtd. 10¾-in. 600 ft.

Judith Basin County

Fletcher E. Hunt No. 1 Doven, SE NE NW Sec. 30-14n-15e. Spd. and S.D.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

H. Clark Rowland No. 1 Brundidge-Mink, SE NW Sec. 35-14n-25e. S.D. 110 ft.

Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 1,030 ft.

O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. S.D. 780 ft.

Richland County

W. M. Fulton No. 1 Richardson, SW SW SE Sec. 29-26n-52e. Drlg. 540 ft.; small S.W. at 435 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. Drlg. 1,980 ft.

Gulf States Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27-5w. S.D. 2,525 ft. until spring.

(Continued on Page 238)

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Jan. 21. — Pipe line runs from the Turner Valley field to Calgary refineries in December totaled 429,165 bbls., compared with 376,250 bbls. in November. This brought the total deliveries for the year to 5,809,536 bbls., compared with 2,363,743 bbls. in 1937.

In December Imperial Oil took 24,799 bbls. of naphtha and 310,091 bbls. of crude, bringing the year's receipts to 341,856 bbls. of naphtha and 3,843,815 bbls. of crude. British American Oil Co. took 199 bbls. of naphtha and 94,076 bbls. of crude in December, with totals of 5,299 bbls. of naphtha and 1,618,566 bbls. of crude for the year.

Turner Valley Completions

In the west flank crude area of South Turner Valley, Extension Royalties No. 1, LSD 14, Section 17-18-2w5, finished 454 feet in the Madison limestone at 8,020 feet, blew into production, making 782 bbls. natural on 24-hour test. It was acidized with 6,000 gallons, bringing production to around 1,400 bbls., and a second treatment increased it to 2,363 bbls. It is being tested for official allowable, and looks like the largest producer in the field.

West Flank Drilling

In the northwest extension of West Central Turner Valley, Lethbridge Petroleums No. 2, LSD 8, Section 24-19-2w5, is starting on derrick. It is 2½ miles northwest of Vulcan-Brown No. 1, the nearest crude producer.

In Section 5-19-2w5, Royalite Oil Co. No. 37, LSD 11, is below 6,782 feet and getting close to the lime. In Section 6-19-2w5, East Crest Oil Co. No. 4, LSD 8, is below 4,791 feet, and planning to carry directional surveys to 8,000 feet to safeguard against drifting hole.

In Section 32-18-2w5, Royalite Oil Co. No. 36, LSD 13-14, is in the Blairmore formation below 7,162 feet.

Tests in the Lime

West of the proven field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, cemented back to 10,002 feet, is swabbing preparatory to a definite test of the upper porous horizon.

In Section 20-18-2w5, Producers Crude Corp. No. 1, LSD 11, finished at 8,045 feet, is producing at temporary quota of 341 bbls. with the aid of booster gas, pending arrival of a packer, when further acidizing will be done.

In Section 17-18-2w5, Anglo-Canadian Oil Co. No. 3, LSD 10, is below 7,642 feet after getting the Madison limestone at 7,270 feet.

In Section 5-19-2w5, Royalite Oil Co. No. 34, LSD 7, finished at 7,500 feet, has been given temporary allowable of 177 bbls.

In the south end of the field, D. & D. Oils No. 1, LSD 12, Section 9-18-2w5, is below 7,125 feet after getting the Madison limestone at 6,790 feet.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 35, LSD 7, Section 27-20-3w5, bottoming at 6,377 feet, has been cemented back to 5,450 feet to overcome caving. Hole is being reamed for 8⅝-inch casing.

New Tests Planned

Considerable new drilling is in prospect for the west flank area of South Turner Valley. In Section 32-18-2w5,

(Continued on Page 252)

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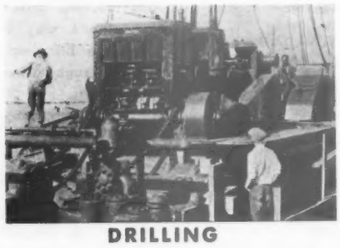

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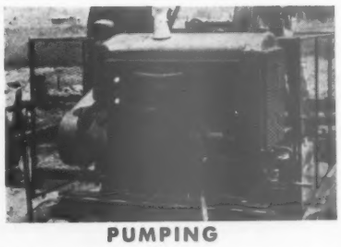

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North Louisiana, Arkansas

By GEORGE WEBER

Lafayette, Ark., County Test Is a Disappointment So Far

SHREVEPORT, La., Jan. 21.—The outstanding wildcat of the week, Shell Petroleum Corp. and Ohio Oil Co. No. 1 Warren, a Lafayette County test near Stamps, Ark., showed slim possibilities of making a commercial producer. The test, drilled on a geophysical prospect, is on structure, with top of the Smackover lime at 7,165 feet, top of the porous lime at 7,173 feet and water contact at 7,186 feet. Elevation of the wildcat is 252 feet.

During the previous week, the operators made a drill-stem test at 7,169-7,215 feet and recovered salt water and oil-cut mud, and a second test in fine soft oolitic lime at 7,171-7,228 feet showed recovery of 1,290 feet of fluid before the seat gave way in four minutes. This test also showed oil. The section in the Smackover has porosity, saturation and closure, but the permeability is unusually low, precluding chances that a commercial well can be completed.

A string of 7-inch casing was set this past week at 7,169 feet. The total depth is 7,225 feet. Late in the week an attempted test was unsuccessful when the drill stem leaked while going in the hole. Considerable attention will be directed to the wildcat as it continues to test over the week-end.

Schuler Completions

Seven new oil wells were completed in the Schuler field over the past week. Lion Oil Refining Co. brought in three: No. 3 Edna, No. 6 Marcus and No. 3 Sewell, for initials of 400, 564 and 650 bbls. daily, respectively. The remaining four wells were Phillips Petroleum Co., No. 2 Brian, No. 2 El Dorado, No. 6 Sewell and No. 8 Sewell. Initials were 528, 344, 480 and 530 bbls. daily. All wells were on inside locations.

The Schuler field is approaching a decline in drilling, as proven inside acreage becomes developed. The outlines of the field are roughly determined at this time by failures on the north edges and field contours in other directions.

The monthly pressure survey in the Jones sand of the field showed a decline of 48 pounds in the reservoir pressure of the Jones sand during the past 33 days. This strongly indicates the presence of a gas drive and the lack of any appreciable water drive in the Jones sand, and a repressuring project, now under consideration, is given new importance. Following the monthly hearing, the field was given its established allowable from the Jones sand, of 15,000 bbls. daily, for the coming month.

The Magnolia field of Columbia, the most interesting field in the South Arkansas trend, was given an allowable of 3,000 bbls. daily, which figure will be fixed by adjusting the per well allowables downward as new producers are brought in during February.

Cotton Valley

A good Bodcaw sand producer was brought in on the west edge of Cotton Valley this week, further indicating an extension to the west, of the previously estimated field limits. North American Consolidated Oil Co. No. 4 Stewart-Coyle, C NW SE Section 29-21-10, cored the "D" sand at 8,339-61 feet, the Bodcaw sand at 8,427-74 feet and the Davis sand at 8,684-8,715 feet, the latter showing gas and distillate odor. A string of 7-inch casing was set at 8,717 feet, with total depth at 8,724 feet.

This week the well was brought in after perforating in the Bodcaw section at 8,432-62 feet. It made an initial of 370 bbls. of distillate in 18 hours through a seven-sixteenths inch choke, and an estimated 5,000,000 cu. ft. of gas. Tubing pressure was 2,500 pounds and casing pressure 2,700 pounds. A later gauge made this week-end showed 655 bbls. of distillate in 24 hours on a half-inch choke, showing it to be one of the best Bodcaw wells in the field.

This greatly enhances the value of properties lying to the west of the present limits of the field. The North American well encountered the top of the Bodcaw at —8,174 feet, about 200 feet higher than anticipated when contours were plotted in the field. This considerable flattening on the west, which is also evident on the northeast, coupled with the good production showing in the new west edge test, livens interest in Cotton Valley edge developments.

Shreveport Field

Following the mile southward extension of production in the Shreveport or Cross Lake field of Caddo Parish, increased interest is shown in drilling and leasing. Several new locations are due for early drilling. The west offset to the new south extension well, C. D. Loe No. 1 Meyer, will make another attempt at completion this coming week. Operators drilled out all cement to a total depth of 5,631 feet, and are squeezing off all perforation points. The completion of a good well to the east increases expectations that the Loe test may be brought in as a producer if proper completion procedure is followed.

Near Vivian, in Caddo Parish, Colonial Corp. No. 1 Thigpen Herold, wildcat on the flank of the Pine Island field, is planning to plug back and cut off the lower 6 feet of the sand section, which is believed responsible for the well's water production. The test was brought in several weeks ago as a crude producer, but it went dead after flowing oil and salt water for a short period.

Production by Pool

Estimated daily gross production, all companies, for week ending January 20, 1939:

NORTH LOUISIANA

	Barrels
Bellevue	665
Caddo light	4,060
Caddo heavy	2,655
Converse	500
Cotton Valley heavy	95
Cotton Valley light	*10,740
Cross Lake	2,450
De Soto and Red River	1,260
Elm Grove	270
Haynesville	2,860
Holly	90
Homer	2,660
Lisbon	4,935
Pleasant Hill	90
Rodessa	28,310
Sarepta-Carterville	†435
Sligo	1,440
Sugar Creek	285
Urania	2,620
Zwolle	2,600
Total	69,020

SOUTH ARKANSAS

Buckner	1,320
Champagnolle	1,700
El Dorado	1,755
Lisbon	250
Magnolia	1,795
Miller County	335
Nevada	610
Rodessa	4,540
Schuler	18,100
Smackover light	1,975
Smackover heavy	15,330
Stephens	515
Troy	1,025
Urbana	1,105
Village‡	480
Total	50,835

Texas side of Rodessa field 29,520 bbls. daily.

*4,590 bbls. is distillate. †100 bbls. is distillate. ‡This field has been divided into two fields, namely, Magnolia and Village. Magnolia field is located in Township 17s-20w and Village field is located in the C Section 15-17s-19w, Columbia County, Arkansas.

Eastern Fields

(Continued from Page 222)

In Amwell Township, A. V. Lewis and others are hauling rig for second test on the William Dodd farm. In South Franklin Township, no work has been done on the Holmes Andrews farm.

In North Fayette Township, Allegheny County, Young Brothers have reached 1,100 feet on the James Sturgeon farm.

Deep Tests

In Beaver County, the test of Hanley and Bird on the S. Calvin farm in South Beaver Township topped the Onondaga lime at 4,660 feet and is drilling at 4,665 feet. With a surface elevation of 1,208 feet this places that formation subsea minus 3,452 feet compared with the discovery well of this pool, Charlotte Calvin (Wm. Graham) Onondaga 4,331 feet; elevation 907 feet or minus 3,424 feet. On the Eliza Allen heirs' farm the Oriskany gas well topped the Onondaga at 4,566 feet with an elevation of 1,153 feet or minus 3,413 feet. The new test appears 39 feet lower than the nearest well and 28 feet lower than the discovery well.

While drilling through the explosive Marcellus shale section the contractors, Fox and Foley, carried about 160 feet of heavy salt brine in the bottom of the hole, which suppressed the violence of the gas pockets as they were penetrated and prevented the tools from being blown up.

Fayette County

On Chestnut Ridge in Springhill Township, Fayette County, the test of Convex Glass Co. on the Paul Dunham farm is still fishing. The hole was cleaned to the top of the tools and the line sheared off and the socket fitted over the rope socket. Two hours jarring on the tools failed to drive them down and the lime around the tools is being acidized. The gas struck below the tools is completely shut off.

In South Union Township, Fayette County, the test of Peoples Natural Gas Co. on the Piedmont Coal Co. lease had a final gauge of 2,700,000 cu. ft. a day. The shut-in pressure appeared higher than the most recent test.

In Mercer County, Carnegie Natural Gas Co. resumed drilling on the A. S. McCullough farm in Jefferson Township and reached 5,018 feet. In Armstrong County, Peoples Natural Gas Co. has the rig on the Lowry Maryin farm in Wayne Township.

Oklahoma Fields

(Continued from Page 217)

Jefferson-Jackson Counties

McNees and others No. 1 Bohanan, SW NW SE Section 33-6s-5w, Oscar area, Jefferson County, was dry and abandoned at 1,530 feet, total depth.

R. L. Ray No. 1 Ellis, NW SW NW Section 5-1s-19w, Tipton pool, Jackson County, had granite wash at 2,454-88 feet, total depth 2,492 feet in lime, and pumped 89 bbls. of 40-gravity oil in 24 hours, initially.

Same operator's No. 1 Shirley, SE NE NE Section 6-1s-19w, had dug pits.

First Reports

In Okfuskee County, Shell Petroleum Corp. No. 2 Keys, NE NE NW Section 11-11-8, Dill pool, was rigging up. Lease Investment Co. No. 1-A Parsons, NE NW NE Section 28-13-10, had dug cellar and pits.

In LeFlore County, LeFlore County Gas Co. No. 1 Hickman, NE NE SE Section 8-8-25, had spudded.

In Caddo County, York and Kansas Oil, Inc., No. 1 Sloan, SW NW SE Section 3-5-9w, Cement field, was a derrick.

Michigan Field Report

By O. C. PRESSPRICH

Wildcat in Ottawa County Is Flowing Near 100 Bbls. Hour

SAGINAW, Mich., Jan. 23.—Discovery of two new prospective oil fields as the week neared a close encouraged Michigan developments during a period when new production was at a low point even in Van Buren County's flush Bloomingdale pool, which has dominated production lists since midsummer.

The first prospective new field was tapped in Wise Township (16n-3w), Isabella County, where a wildcat surrounded by dry holes, and with nearest production more than a mile away, came into production at 150 bbls. naturally, later acidized to 500 bbls. in 13 hours. The wildcat was McClanahan Oil Co. No. 1 Nixon, SE SE SE Section 17. The production was tapped 50 feet in the Dundee limestone. Operators reported formations running slightly higher than the logs of surrounding dry holes. Its prolific flow, however, was taken as an indicator of further exploration in the area, and failure tests were not considered close enough to forbid further testing. Two small wells about a mile south are the nearest production, and considerable acreage in the western area appeared likely for probing since the discovery.

Though one well does not make an oil field, Ottawa County nevertheless rejoiced over its first oil well, which promised indications of at least a flurry of exploration. Oil spurted over the derrick at Carscallen & Anderson No. 1 Longnecker, SE SE SE Section 4, Tallmadge Township (7n-13w), a rank wildcat far removed from the nearest production in southwestern Michigan fields. Drillers estimated the well flowed nearly 100 bbls. during the hour before it was pinched in. Pay was tapped at a depth of 1,983 feet. The well is near Marne, Mich.

Exclusive of the two new wildcat additions, Michigan fields added only eight oil producers, one small gasser, seven dry holes.

Arenac County

Adams Township (19n-3e) — After an absence of several weeks from new production columns, the Adams field showed its dual production nature by reporting one of its best additions in nearly a year. It was Chapman Oil Co. No. 1 McTaggart, SW NE NE Section 26, acidized to 200 bbls. daily. It is a Dundee producer, though most production in Arenac is from Traverse lime, Dundee production having been tapped only within the last year. It is one of the few fields in Michigan producing from two formations.

Allegan County

Dorr Township (4n-12w)—Crown Development Co. No. 1 Harnish, NE SW SW Section 30, failed as a commercial producer and will be abandoned. It was an attempt to tap a connecting pay link with the old Salem pool.

Ganges Township (2n-16w)—Failure was recorded at Muskegon Development Co. No. 1 Slater, SW SW SW Section 14.

Overisel Township (4n-14w)—A small 40-bbl. natural producer, scheduled for acid treatment, was tapped at Gordon Oil Co. No. 2 Essink, SE SE SW Section 22, on the east edge of the so-called "21" pool.

Salem Township (4n-13w) Salem Oil & Gas Co. No. 4 George, SW NW SW Section 21, gauged 20 bbls. after acid, and was scheduled for further testing.

Clare County

Freeman Township (18n-6w) — One semicompleted producer was reported in Freeman last week, Ide & Glavin No. 1 Van Horn, SW SE NE Section 3. It rated about 50 bbls. daily, and was scheduled for further testing. It is located on the western fringe of Section 3 development.

Redding Township (19n-6w)—The only completed producer in the Clare field last week was Pure Oil Co. No. 2 Switzer, NE SE SW Section 27, which gauged at 700 bbls. naturally. Pure No. 3-B Bicknell was testing after reporting a show of about 100 bbls. Proximity of the water level, also found in nearby wells, brought caution to testing progress.

Gladwin County

Buckeye Township (18n-1w)—A small producer in the extreme southeast corner of the North (Wicklund) pool, rated at 35 bbls., was added in Buckeye. It was Rex Oil & Gas Co. No. 4 McKimmy, NE NE NE Section 13. Despite lack of new development, Buckeye, well into its second year, continues its uninterrupted domination as the state's leading producer.

Gratiot County

North Star Township (10n-2w)—Ide & Glavin Development Co. No. 1 DeVuyst, C SW Section 11, failed as a commercial producer.

Midland County

Hope Township (16n-1e)—Failure was recorded at Andrews & Walters No. 1 Harris, SW SW SW Section 14.

Otsego County

Bagley Township (30n-3w)—F. A. Summers No. 1 Darling, SE SE SE Section 28, tapped a small gasser in wildcat territory, rated at 87,000 cu. ft. daily.

St. Clair County

Burchville Township (8n-17e)—Another attempt to link oil production of Petrolia, Ontario, with the Thumb district failed last week at Lee Brown No. 1 Johnson, NW SE NE Section 31, abandoned as dry.

Van Buren County

Bloomingdale Township (1s-14w)—After leading the state's new production consistently in recent months in numbers of producers, even the Bloomingdale flush pool hit the doldrums with only two producers and a like number of dry holes added. Voorhees Drilling Co. No. 2 Melvin, SW SE SE Section 8, led with the largest gauging 1,200 bbls. naturally, estimated. H. E. Fowler No. 1 Melvin, SE SW SE Section 8, gauged 600 bbls. naturally. The dry holes were Rowmor Corp. No. 1 Banks, SW SE SE Section 11, and W. P. Shoemaker No. 1 Bogsted, SE NW SW Section 13.

Columbia Township (1s-15w)—Rex Oil & Gas Co. No. 1 Landrus, NE SE NE Section 10, indicated a possible field extension from Bloomingdale with a reported 50-bbl. acidized producer. Formations were reported similar.

Rocky Mountain Fields

(Continued from Page 235)

Toole County

Kevin-Sunburst had two new operations and no completions.

Superior Pet. Co. No. 11 Govt., CEL NW SW Sec. 12-35n-3w. Drlg. 300 ft. (first report).
Big West Oil Co. No. 9 Gunderson, NW SE NW Sec. 19-35n-2w. Drlg. 820 ft. (first report).
K. C. Morton No. 1 Osthoff, SW SW SE Sec. 1-35n-3w. Drlg. 1,000 ft.
Kippen Oil & Gas Co. No. 1 Thompson, C NE SE Sec. 28-34n-1e. Spdg.
Prevel & Shea No. 1 Govt., CSL NW SW Sec. 11-35n-3w. Drlg. 1,500 ft.; good S.G. in Sunburst 1,100-10 ft.
Sid Porter No. 1 Bradley, SE cor. Sec. 3-34n-2w. S.D. 500 ft.
Neptune O. & G. Co. No. 7 Seabrook, NW NW SW Sec. 19-35n-2w. T.D. 1,580 ft.; prep. to pump.
Kluth et al No. 2 Gunderson, SW cor. Sec. 18-35n-2w. T.D. 1,410 ft.; C.O.
Platt-Bell No. 1 Govt., SW NW NE Sec. 9-34n-2w. Drlg. 1,487 ft.; Sunburst 1,495-1,523 ft.; 200 ft. W.I.H.
C. L. Smith, Agt., No. 1 Govt., SW SE NW Sec. 13-35n-2w. S.D. 1,045 ft.
Aspen O. & R. Co. No. 1 Govt., C NE SE Sec. 25-36n-3w. S.D. 2,050 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,990 ft.; rng. 6¼-in.

UTAH

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. Drlg. 2,538 ft.; out of salt at 2,530 ft.; S.O. and G.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,110 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

Kansas Fields

(Continued from Page 221)

Greenwood County

Shull Drilling Co. No. 2 Long, SE SE NE Section 17-23-13, Vergil area, Greenwood County, was bottomed at 1,787 feet, pumped 5 bbls. of fluid in six hours, acidized with 1,500 gallons without increasing production, and was abandoned.

Western Kansas Oil & Refining Co. No. 1-A Shultz, NW NW SW Section 10-28-11, was a location. Rhodes and others No. 3 Long, SE SW NE Section 17-23-13, was rigging up machine.

Other First Reports

In Pratt County, Shell Petroleum Corp. No. 1 Leman, C SE Section 13-28-12w, was rigging up rotary.

In Harvey County, Okan Drilling Co. No. 1 Ashman, C NW NW Section 29-23-3w, was building rotary rig.

In Ellis County, Twin Drilling Co. No. 2 Polcyn, C W half E half SE Section 12-13-16w, wildcat, was rigging up rotary; J. B. Hall No. 12-B Oswald, NW SW SE Section 11-12-16w, Blue Hill area, was drilling below 1,045 feet; C. B. Davis No. 1 Richards, NW NE SW Section 5-11-18w, Richards area, was building rotary rig.

In Rooks County, Broadview Oil Co. No. 1 Beardmore, NW SE SW Section 2-9-16w, Laton pool, was moving in material.

West Texas Fields

(Continued from Page 229)

Winkler County

Magnolia Petroleum Co. No. 207 Walton, 3,175-3,277 feet, 482 bbls.

Yoakum County

Aloco Oil Co. No. 2 C. W. Cecil, 4,955-5,141 feet, 1,394 bbls. Honolulu Oil Corp. No. 1 R. M. Kendrick, 4,983-5,169 feet, 528 bbls. Toddie L. Wynne, trustee, No. 2 C. A. Thomas, 5,027-2,141 feet, 886 bbls.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Carson County

Magnolia Petroleum Co. No. 48 fee No. 244, 2,990-3,014 feet, 853 bbls.

Hutchinson County

Danube Oil Co. No. 2 Cheatum, 3,045-53 feet, 20 bbls. Phillips Petroleum Co. No. 7 Gary, 3,207-17 feet, 302 bbls.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Richfield Oil, No. 1 Tinaquaic, Foxen Can., S. Barbara	36- 9-32	3,585	sd. sh. drlg.
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	3,035	redrlg. 1,380
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,270	redrlg. 3,131
Litho Oil, No. 1 R. I. E., Capitan, Santa Barbara	5- 4-30	175	sd. sh. drlg.
T.-O. Oil, No. 2 Mdivani, S. B. Mesa, Santa Barbara	28- 4-27	1,500	O.S. drlg.
Ciaran Oil, No. 1 Hardison, Sespe, Ventura	22- 4-20	2,680	sd. sh. drlg.
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,580	O.S. drlg.
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	598	sd. sh. drlg.
Speik Oil, No. 2 Speik, Sespe, Ventura	33- 5-19	3,635	pump 70 b.d.
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,420	sd. sh. drlg.
Texas Co., No. 136 Shiells, Shiells Canyon, Ventura	4- 3-19	2,970	O.S. drlg.
El Rancho Oil, No. 2 Elkins, Shiells Canyon, Ventura	9- 3-19	874	sd. sh. drlg.
Continental Oil, No. 10 Grubb, San Miguelito, Ventura	24- 3-24	5,390	hd. sh. drlg.
C. C. M. Oil, No. 24-B Hobson, Rincon, Ventura	16- 3-24	1,176	sd. sh. drlg.
Tide Water A. O., No. 36 V.L.W., Ventura Ave., Vent.	25- 3-23	9,316	O.S. drlg.
Tide Water A. O., No. 40 V.L.W., Ventura Ave., Vent.	25- 3-23	6,587	hd. sd. drlg.
Tide Water A. O., No. 123 Lloyd, Ventura Ave., Vent.	27- 3-23	5,570	cmtd. 4,695
Tide Water A. O., No. 128 Lloyd, Ventura Ave., Vent.	27- 3-23	9,047	sd. sh. drlg.
Tide Water A. O., No. 134 Lloyd, Ventura Ave., Vent.	27- 3-23	8,339	redrlg. 6,752
Tide Water A. O., No. 8 Hartman, Ventura Ave., Vent.	22- 3-23	3,784	sd. sh. drlg.
Shell Oil, No. 97 Taylor, Ventura Ave., Ventura	21- 3-23	8,586	flow 2,112 b.d.
Shell Oil, No. 33 Edison, Ventura Ave., Ventura	28- 3-23	3,070	sd. sh. drlg.
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	6,770	redrlg. 4,398
Alliance Pet., No. 3 Hisey, Ventura Ave., Ventura	21- 3-23	1,487	sd. sh. drlg.
Lloyd Corp., No. 2 Dabney, Ventura Ave., Ventura	23- 3-23	7,303	will deepen
Cal. Expl. Co., No. 2 Occidental, Lost Hills, Kern	24-26-20	2,296	sd. sh. drlg.
Tide Water A. O., No. 11-R Williamson, L. Hills, Kern	2-26-20	1,580	O.S. drlg.
Belridge Oil, No. 35-26-A, North Belridge, Kern	35-27-20	6,980	br. sh. drlg.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	8,240	O.S. drlg.
Belridge Oil, No. 26-39, North Belridge, Kern	26-27-20	2,992	sd. sh. drlg.
Belridge Oil, No. 28-2, North Belridge, Kern	28-27-20	6,991	br. sh. drlg.
Tide Water A. O., No. 23-3, North Belridge, Kern	22-27-20	4,984	sd. sh. drlg.
Tide Water A. O. No. 22-21, North Belridge, Kern	21-27-20	8,612	O.S. drlg.
Richfield Oil, No. 3, North Belridge, Kern	22-27-20	3,871	sd. sh. drlg.
Amerada Pet., No. 6 Beer, Blackwells Corner, Kern	21-26-19	2,090	br. sh. drlg.
Emigrant Oil, No. 1 Den, Devil's Den, Kern	24-25-18	4,104	bailing
Herzog, R. D., No. 1 Den, Devil's Den, Kern	27-25-18	50	sd. sh. drlg.
Shell Oil, No. 21 Freeman, Round Mountain, Kern	20-28-29	1,400	sd. sh. drlg.
Helm & Smith, No. 11-A Kern, Kern River, Kern	34-28-28	677	pump 15 b.d.
Fuhrman, Alfred, No. 11-A Kern, Kern River, Kern	28-28-28	505	O.S. drlg.
Superior Oil, No. 1 Clerico, Magunden, Kern	26-29-28	1,840	sd. sh. drlg.
Richfield Oil, No. 1, Union Avenue, Kern	5-30-28	8,746	reaming
Wood-Callahan Oil, No. 4 Community, Edison, Kern	21-30-29	4,244	will abdn.
Texas Co., No. 35-1 KCL, Fruitvale, Kern	35-28-26	4,587	sd. sh. drlg.
West. Gulf Oil, No. 41-B KCL, Fruitvale, Kern	22-29-27	4,087	O.S. drlg.
West. Gulf Oil, No. 1 Ansolabehere, Fruitvale, Kern	14-29-27	2,916	flow 267 b.d.
Pacific Southwest Oil, No. 1 Dillon, Fruitvale, Kern	27-29-27	1,287	sd. sh. drlg.
Renner, G. E., No. 2 R.H.L., Sivert, Kern	27-30-30	2,600	cleaning out
Hillview Oil, No. 1 Tejon, Caliente Creek, Kern	11-30-30	1,694	gr. sd. drlg.
Continental Oil, No. 4-A KCL, Wasco, Kern	8-27-24	8,387	sd. sh. drlg.
Standard Oil, No. 2 Mushrush, Wasco, Kern	7-27-24	8,100	sd. sh. drlg.
Standard Oil, No. 8-2-B KCL, Wasco, Kern	17-27-24	2,161	sd. sh. drlg.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	11,270	sd. sh. drlg.
Union Oil, No. 7-34 KCL, Rio Bravo, Kern	34-28-25	11,515	locate water
General Pet., No. 3 Van Ness, Rio Bravo, Kern	2-29-25	9,984	sd. sh. drlg.
General Pet., No. 1 Caldwell, Rio Bravo, Kern	35-28-25	1,483	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,598	bailing
Standard Oil, No 11-16 KCL, Greeley, Kern	20-29-26	9,690	br. sh. drlg.
Standard Oil, No. 11-17 KCL, Greeley, Kern	18-29-26	3,998	sd. sh. drlg.
Standard Oil, No. 12-6 KCL, Greeley, Kern	30-29-26	5,481	sd. sh. drlg.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	8,109	rigging up
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	10,830	br. sh. drlg.
Superior Oil, No. 12 KCL, Greeley, Kern	3-30-26	11,022	sd. sh. drlg.
Shell Oil, No. 81-29-B KCL, Ten Section, Kern	29-30-26	8,220	flow 330 b.d.
Shell Oil, No. 61-14-A KCL, Canal, Kern	14-30-25	1,993	sd. sh. drlg.
Shell Oil, No. 34-14-A KCL, Canal, Kern	14-30-25	8,521	flow 3,390 b.d.
Shell Oil, No. 87-4-B KCL, Canal, Kern	4-30-25	10,890	sd. sh. drlg.
Ohio Oil, No. 10-E KCL, Canal, Kern	14-30-25	8,442	O.S. drlg.
Standard Oil, No. 1 Rio Bravo fee, Canal, Kern	12-30-25	8,280	O.S. drlg.
Ohio Oil, No. 2-F KCL, Coles Levee, Kern	10-31-25	5,899	sd. sh. drlg.
Wilbent Oil, No. 2 Royer, Midway-Sunset, Kern	7-11-23	4,443	tested wet
Standard Oil, No. 201-13-B, Midway-Sunset, Kern	13-32-24	3,235	pump 5 b.d.
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	5,035	cleaning out
Texas Co., No. 32 Midway, Midway-Sunset, Kern	32-32-24	2,903	sd. sh. drlg.
National Oil, No. 32 Midway, Midway-Sunset, Kern	35-32-23	498	sd. sh. drlg.
Standard Oil, No. 7-30 Western, McKittrick, Kern	7-30-22	1,476	sd. sh. drlg.
Standard Oil, No. 7-31 Western, McKittrick, Kern	7-30-22	2,050	idle
Westco Pet., No. 1 West, McKittrick, Kern	34-30-22	4,840	br. sh. drlg.
Hall-Baker Co., No. 1 Williams, McKittrick, Kern	2-30-21	1,380	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	8,765	testing
Tide Water A. O., No. 2 S.P., Tejon Ranch, Kern	15-11-19	6,714	sd. sh. drlg.
Progressive Oil, No. 3, East Coalinga, Fresno	20-19-15	740	br. sh. drlg.
General Pet., No. 102 Esperanza, W. Coalinga, Fresno	6-20-15	1,301	sd. sh. drlg.
General Pet., No. 103 Esperanza, W. Coalinga, Fresno	6-20-15	1,198	sd. sh. drlg.
Jarvis, L. F., No. 2 Leo, West Coalinga, Fresno	14-20-14	307	sd. sh. drlg.
Petseahon, No. 37-7-F, Southeast Coalinga, Fresno	7-20-16	6,844	br. sh. drlg.
Petseahon, No. 71-18-F, Southeast Coalinga, Fresno	18-20-16	7,390	sd. sh. drlg.
Standard Oil, No. 71-13-C fee, S. E. Coalinga, Fresno	13-20-15	733	sd. sh. drlg.
Standard Oil, No. 1-17-F fee, S. E. Coalinga, Fresno	17-20-16	7,870	O.S. drlg.
Superior Oil, No. 1 Cagle, Southeast Coalinga, Fresno	6-20-16	7,215	O.S. drlg.
Stuart Oil, No. 1 Alcalde, Alcalde, Fresno	12-21-14	1,268	bl. sh. drlg.
Union Oil, No. 4 King, Kettleman North, Fresno	29-21-17	8,520	testing
K.N.D.A., No. 54-24-H, Kettleman North, Fresno	24-21-16	9,225	fish D.P.
K.N.D.A., No. 6-16-Q, Kettleman North, Kings	16-22-18	7,690	gr. sd. drlg.
K.N.D.A., No. 36-18-Q, Kettleman North, Kings	18-22-16	1,283	sd. sh. drlg.
K.N.D.A., No. 65-20-Q, Kettleman North, Kings	20-22-18	7,651	flow 1,295 b.d.
K.N.D.A., No. 36-22-Q, Kettleman North, Kings	22-22-18	7,460	hd. sd. drlg.
K.N.D.A., No. 78-22-Q, Kettleman North, Kings	22-22-18	6,997	br. sh. drlg.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	11,030	P.B. 10,684
Standard Oil, No. 56-1-P, Kettleman North, Kings	1-22-17	6,090	br. sh. drlg.
Standard Oil, No. 76-7-Q, Kettleman North, Kings	7-22-18	6,190	br. sh. drlg.
Cal. Pet. Prod., No. 1 Irons, Cuyama, San Luis Obispo	19-10-24	1,830	fish D.P.
Epco, Inc., No. 1 Ajax, Union, San Luis Obispo	27-26-13	4,010	gr. sd. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Antelope Valley Oil, No. 1 Palmdale, Los Angeles	17- 6-12	1,086	sd. sh. drlg.
Mojave Pet., No. 1 Hillside, Gorman, Los Angeles	5- 8-18	510	sd. sh. drlg.
Texas Co., No. 1 Anderson, Ocean Park, Los Angeles	17- 2-15	7,285	redrlg. 4,930
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,100	coring ahead
Bolling Oil, No. 2 Autry, Torrance, Los Angeles	23- 4-14	3,187	sd. sh. drlg.
Cinco Oil, No. 1 Woodruff, Torrance, Los Angeles	23- 4-14	3,600	rigged up
Campeet Oil, No. 17-A Kleinmyer, Torrance, L. A.	23- 4-14	3,856	will deepen
Cuba Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	2,697	sd. sh. drlg.
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigged up
Hunt. Signal Oil, No. 1 Clarke, Torrance, Los Angeles	23- 4-14	4,097	sd. sh. drlg.
Kirk, W. A., No. 5 Lomita, Torrance, Los Angeles	23- 4-14	5,098	P.B. 2,675
Kovell Oil, No. 1 Deep Hole, Torrance, Los Angeles	23- 4-14	3,991	sd. sh. drlg.
Logan Pet., No. 1 Hadley, Torrance, Los Angeles	23- 4-14	5,145	flow 220 b.d.
Lebow, C. H., No. 1 fee, Torrance, Los Angeles	23- 4-14	5,070	O.S. drlg.
Maldum Pet., No. 3 Lomita, Torrance, Los Angeles	23- 4-14	5,150	flow 640 b.d.
Maldum Pet., No. 4 Lomita, Torrance, Los Angeles	23- 4-14	3,762	sd. sh. drlg.
McCaslin, W. E., No. 1 Lomita, Torrance, Los Angeles	23- 4-14	2,596	sd. sh. drlg.
Pacific West. Oil, No. 13 Marble, Torrance, L. A.	15- 4-14	3,770	will deepen
Paso Oil, No. 1 Lyle, Torrance, Los Angeles	22- 4-14	5,128	cleaning out
Standard Oil, No. 1-2 Marble, Torrance, Los Angeles	15- 4-14	4,800	sd. sh. drlg.
Tiger Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,394	sd. sh. drlg.
Westside Oil, No. 3 Exeter, Torrance, Los Angeles	23- 4-14	5,050	sd. sh. drlg.
Wilson, Ray, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	3,880	sd. sh. drlg.
Whit. S. F. S. Synd., No. 1 Lomita, Torrance, L. A.	23- 4-14	5,158	flow 1,050 b.d.
West Basin Oil, No. 1 Eyster, Torrance, Los Angeles	23- 4-14	5,145	O.S. drlg.
C. C. M. O., No. 51, Torrance, Los Angeles	14- 4-14	3,725	will deepen
C. C. M. O., No. 12 Kettler, Torrance, Los Angeles	14- 4-14	3,825	rigging up
D. & B. Oil, No. 3 Lomita, Harbor City, Los Angeles	25- 4-14	5,254	flow 165 b.d.
General Pet., No. 1 Poggi, Harbor City, Los Angeles	25- 4-14	5,200	O.S. drlg.
Sunset Oil, No. 2 Security, Harbor City, Los Angeles	25- 4-14	5,324	rig to pump

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulling pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg., or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Union Oil, No. 49 Hellman, Dominguez, Los Angeles	33-	3-13	8,942	fish D.P.
Shell Oil, No. 97 Reyes, Dominguez, Los Angeles	33-	3-13	7,610	sd. sh. drlg.
O'Donnell, J. L., No. 46 Mail, Rosecrans, Los Angeles	19-	3-13	7,752	flow 450 b.d.
Bankline Oil, No. 2 Kirby, Rosecrans, Los Angeles	20-	3-13	1,984	sd. sh. drlg.
Union Oil, No. 28 Rosecrans, Rosecrans, Los Angeles	19-	3-13	2,297	sd. sh. drlg.
Union Oil, No. 30 Rosecrans, Rosecrans, Los Angeles	19-	3-13	7,660	sd. sh. drlg.
Universal Cons'd., No. 14 Trust, Rosecrans, L. Angeles	18-	3-13	7,845	P.B. 7,760
Isco Pet., No. 2 Abel, Rosecrans, Los Angeles	19-	3-13	3,990	sd. sh. drlg.
Superior Oil, No. 12 Maxwell, Rosecrans, Los Angeles	19-	3-13	8,852	P.B. 7,650
Hydrocarbon Prod., Inc., No. 1 Cole, Rosecrans, L. A.	19-	3-13	7,752	cleaning out
Hydrocarbon Prod., Inc., No. 1 Duchess, Rose., L. A.	19-	3-13	7,815	O.S. drlg.
Royalty Ser. Corp., No. 3 Gordon, Rosecrans, L. A.	19-	3-13	7,835	swabbing
Barnsdall Oil, No. 5 R.S.F., Newhall, Los Angeles	26-	4-17	2,994	sd. sh. drlg.
Mojave Pet., No. 2 Jennings, Newhall, Los Angeles	33-	5-14	500	sd. sh. drlg.
Mangrum & Page, No. 1 Lintz, Newhall, Los Angeles	4-	3-15	212	sd. sh. drlg.
O'Donnell, J. L., No. 1 Hammond, Newhall, L. Angeles	8-	3-16	4,305	idle
General Pet., No. 32 Harbor, Wilmington, L. Angeles	2-	5-13	1,763	sd. sh. drlg.
General Pet., No. 37 Harbor, Wilmington, L. Angeles	2-	5-13	3,535	flow 760 b.d.
General Pet., No. 12 S.P., Wilmington, Los Angeles	2-	5-13	2,060	sd. sh. drlg.
Allied Pet., No. 30 Harbor, Wilmington, Los Angeles	35-	4-13	5,683	P.B. 3,341
Richfield Oil, No. 16 P.D., Wilmington, Los Angeles	2-	5-13	3,175	flow 225 b.d.
Richfield Oil, No. 31 P.D., Wilmington, Los Angeles	2-	5-13	1,330	sd. sh. drlg.
Union Pacific R. R., No. 97, Wilmington, Los Angeles	4-	5-13	3,381	flow 190 b.d.
Union Pacific R. R., No. 98, Wilmington, Los Angeles	4-	5-13	2,910	flow 230 b.d.
Union Pacific R. R., No. 99, Wilmington, Los Angeles	4-	5-13	2,071	sd. sh. drlg.
Union Pacific R. R., No. 12-E, Wilmington, L. Angeles	34-	4-13	2,700	sd. sh. drlg.
Universal Cons'd., No. 7 Newport, Wilmington, L. A.	2-	5-13	1,994	sd. sh. drlg.
Grady, R. T., No. 1 Associates, San Pedro, Los Angeles	23-	5-14	614	idle
Seacliff Pet., No. 1 Club, Montebello, Los Angeles	3-	2-12	715	idle
Olympic Refining Co., No. 1 Smith, Montebello, L. A.	2-	2-12	6,644	sd. sh. drlg.
St. Helens Pet., No. 30 Monterey, Montebello, L. A.	2-	2-12	4,396	sd. sh. drlg.
St. Helens Pet., No. 4 Mulholland, Montebello, L. A.	2-	2-12	3,285	sd. sh. drlg.
Standard Oil, No. 2 Braun, Montebello, Los Angeles	2-	2-12	6,610	O.S. drlg.
Standard Oil, No. 4 Braun, Montebello, Los Angeles	2-	2-12	6,384	hd. sh. drlg.
Standard Oil, No. 5 Braun, Montebello, Los Angeles	2-	2-12	4,983	fish D.P.
Standard Oil, No. 2 Kaufman, Montebello, L. Angeles	2-	2-12	3,372	sd. sh. drlg.
Standard Oil, No. 4 Harvey, Montebello, Los Angeles	2-	2-12	4,390	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, L. A.	2-	2-12	6,681	flow 1,168 b.d.
Union Oil, No. 1 Calkins, Montebello, Los Angeles	2-	2-12	7,014	O.S. drlg.
Union Oil, No. 4 Howard & Smith, Montebello, L. A.	2-	2-12	6,670	sd. sh. drlg.
Union Oil, No. 3 Wilcox, Montebello, Los Angeles	2-	2-12	2,171	sd. sh. drlg.
Union Oil, No. 30 La Merced, Montebello, Los Angeles	1-	2-12	5,070	sd. sh. drlg.
Stanley Oil, No. 1 Mont., Montebello, Los Angeles	2-	2-12	4,386	sd. sh. drlg.
Pongratz Oil, No. 1 Newmark, Montebello, L. Angeles	3-	2-12	4,677	sd. sh. drlg.
McVicar & Rood, No. 3 Manz, Montebello, Los Angeles	2-	2-12	6,481	sd. sh. drlg.
Herley-Kelly, Inc., No. 2 Burke, Montebello, L. A.	2-	2-12	4,286	sd. sh. drlg.
H. & C. Oil, No. 1 Joyce, Whittier, Los Angeles	22-	2-11	2,141	sd. sh. drlg.
Texas Co., No. Baldwin, Santa Fe Springs, L. Angeles	6-	3-11	6,844	P.B. 6,739
Massey & Asso., No. 1 Taylor, Long Beach, L. Angeles	19-	4-12	4,745	pump 201 b.d.
Texas Co., No. 1-13-A Smith, Anaheim, Orange	8-	4-10	7,098	sd. sh. drlg.
Brea Canyon Oil, No. 49 Brea, Brea Canyon, Orange	2-	3-10	4,140	sd. sh. drlg.
Shell Oil, No. 20 Orange, Brea Canyon, Orange	2-	3-10	7,830	sd. sh. drlg.
Battersby, J. M., No. 1 Associates, Carmenita, Orange	21-	3-11	8,950	fish. swab
Goodrich Oil, No. 1 Paige, Richfield, Orange	22-	3- 9	3,160	bailing
Southwest Expl., No. 5 State, Hunt. Beach, Orange	10-	6-11	4,115	pump 355 b.d.
Southwest Expl., No. 6 State, Hunt. Beach, Orange	10-	6-11	3,717	sd. sh. drlg.
Southwest Expl., No. 14 State, Hunt. Beach, Orange	10-	6-11	2,791	sd. sh. drlg.
Wilshire Oil, No. 2 H.B., Huntington Beach, Orange	10-	6-11	4,192	redrlg. 1,297
Patos Drlg. Co., No. 1 Graham, Sunset Beach, Orange	21-	5-11	229	sd. sh. drlg.
Shell Oil, No. 2 Irvine, Corona Del Mar, Orange	6-	7- 9	2,241	dry; abd.
Shell Oil, No. 3 Irvine, Corona Del Mar, Orange	6-	7- 9	473	sd. sh. drlg.
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-		4	806 fish D.P.
Palm City Oil, No. 1 Palm City, San Diego	21-18-		2	181 sd. sh. drlg.
So. Count. Pet., No. 1 Serranos, San Bernardino	22-	2-	8	2,831 sd. sh. drlg

KANSAS

Week Ending January 21 (Descriptions are East unless marked otherwise)

Barton County

Amerada Pet. Co. No. 1 Kruckenberger, C NE NE Sec. 14-19-15w. Lans. 3,260 ft.; Arb. 3,572 ft.; P. 33 B.O. in 24 hrs. after 1,300-ft. wtr. load.
Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lansing 3,100 ft.; Arb. 3,338 ft.; 600 ft. O.I.H.
I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. S.D. 2,250 ft.
Sinclair Prairie No. 1-A Pichner, NE SE SE Sec. 10-16-11w. Drlg. 3,190 ft.

Butler County

Bowland & McCoy No. 1 Frankson, SE SW Sec. 2-29-6. Drlg. 165 ft.
Higgens & Pierce No. 1-A Shrieves, NE NW SE Sec. 2-26-4. U.R. 1,000 ft.
Simpson & Estes No. 1 Farm, SE NE NE Sec. 30-27-7. Miss. 2,784-91 ft.; Simp. 3,193 ft.; wtr. 3,203-06 ft., T.D.; D.&A.

Cowley County

Barnsdall No. 1 Snodgrass, NW SE Sec. 36-30-6. C.O. 1,725 ft.
Brewer & Blair No. 1 Miller, NE NW NE Sec. 13-32-5. Drlg. 1,870 ft.
Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. T.D. 3,248 ft.
Phillips Pet. Co. No. 1 Bernard, SE SE NE Sec. 19-33-6. Drlg. 1,250 ft.
C. I. Ross No. 1 Backus, SE SE NE Sec. 31-30-3. T.D. 525 ft.; D.&A.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Drlg. 1,765 ft.

Ellis County

Bridgeport No. 1 Froelich, CWL SW Sec. 34-12-16w. Fsg. 1,130 ft.
C. L. Carlock No. 1 Philip, SE SW NE Sec. 10-15-17w. Drlg. 3,075 ft.
Darby Pet. No. 1 Peavey, NW NW NE Sec. 24-11-18w. T.D. 3,456 ft.; swb. 110 B.O. in 15 hrs.

Graham County

Continental Oil Co. No. 1 Drumm Comm. Co., SE SE NE Sec. 16-9-21w. Drlg. 2,462 ft.
Continental Oil Co. No. 1 Putnam Inv. Co., CWL SW Sec. 3-9-21w. Drlg. 3,050 ft.

Greenwood County

Hancock et al No. 1 Rousch, C S½ SE NW Sec. 8-28-13. T.D. 1,530 ft.; S.D.
H. L. Turner No. 1 Black, SE NE NW Sec. 3-27-13. H.F.W. 1,895 ft.; S.D.

Harvey County

Lanahan Drlg. Co. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Duwe & Farris No. 1 Kimminau, NE NW SW Sec. 12-30-9w. Set pkr. 4,450 ft.; 100,000 cu. ft. gas; R.U. to D.D.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. T.D. 3,018 ft.; F. 22 B.O. in 24 hrs.

Marion County

Cox & McGinnis and Saco Oil Co. No. 1 Jolliffe, C S½ SW SE Sec. 2-22-5. Drlg. 2,652 ft.
Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,380 ft.; 300 ft. O.I.H.; no test.
Vickers Pet. No. 1 Sutphin, SW SE SW Sec. 30-22-4. Drlg. 250 ft.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.D. 1,200 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Miss. 2,835 ft.; H.F.W. 3,302-10 ft.; S.D. for csg. 3,480 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Rice County

Cities Service No. 1 DeWitt, CSL NE Sec. 33-19-9w. Arb. 3,174 ft.; W.O.C.
Frank Hollow No. 1 Hohl Est., C N½ N½ N½ Sec. 3-18-10w. Lans. 2,955 ft.; Tpk. 2,566 ft.; set csg. 3,188 ft.
Spurrier & Bruce No. 1 Cary, NE NW NW Sec. 30-18-8w. O.W.D.D.; O.T.D. 1,530 ft.; S.D. 1,680 ft.
J. H. Tatlock No. 1 L. C. Proffitt, SW SE SW Sec. 12-20-10w. Lansing 3,025 ft.; Arb. 3,327-3,335 ft., T.D.; P. 99 B.O. in 8 hrs.; considerable wtr.

Rooks County

Phillips Pet. Co. No. 1 Tanzey, C NW SW Sec. 25-8-18w. Arb. 3,418-3,423 ft. T.D. 3,424 ft.; acd. and swb. 21 B.F.
Producers No. 1 Ham (O.W.D.D.), SW SW NW Sec. 25-7-19w. O.T.D. 1,800 ft.; Lans. 3,043 ft.; rng. 7-in. 3,045 ft.

Russell County

K. F. Nelson No. 1 Polcyn, SW Sec. 31-13-15w. H.F.W. 3,389-91 ft.; T.D. 3,393 ft.; P.B. 3,164 ft. and W.O.C.
Phil-Han No. 1 Weimeister, SW Sec. 13-14-13w. Top pay 2,655 ft.; perf. and acd. and swb. ½ B.O.P.H.; to P.B.
R. H. Shields No. 1-A Gross, CSL SW SE Sec. 5-15-13w. Lans. 2,929 ft.; drlg. 2,931 ft.
Earl Wakefield No. 1 Meharg, SE SE SE Sec. 16-15-13w. Top pay 3,099 ft.; T.D. 3,112 ft.; acdzg. and P.&F. 279 B.O. in 8 hrs.; pot. 837 B.O.P.D.; comp.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Drlg. 1,100 ft.

Sedgwick County

Century Pet. Co. No. 1 Wilke, SW SE SW Sec. 1-29-2. S.D. 128 ft.
Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. U.R. 2.356 ft.

Stafford County

Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.
Virginia Drlg. Co. No. 1 Schlockter-meyer, SE NW Sec. 7-21-11w. Drlg. 1,350 ft.

Wabaunsee County

Scheu & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. C.O. 440 ft.

Woodson County

Roby et al No. 1 Meairs, SW SW NW Sec. 21-25-14. Drlg. 400 ft.
M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

OKLAHOMA

Week Ending January 21

NORTHERN OKLAHOMA

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. T.D. 2,556 ft.; S.D.O.

Cleveland County

Burke-Greis No. 1 Alberts, SE SW NW Sec. 19-7-1w. Hunton 6,885 ft.; cg. to 6,982 ft.; T.D.
Harper, Turner et al No. 1 Taylor, SE NE NW Sec. 23-8-2w. T.D. 7,079 ft.; to drill past D.P.
Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; drove swb. to 7,636 ft.; acdzg. and swb. to bttm.; S.S.O.

Garfield County

Champlin Ref. Co. No. 1 Allen, SE SE SE Sec. 26-24-8w. Drlg. 5,777 ft.
Hughes Drlg. Co. No. 1 Meisner, C NE NW Sec. 10-20-4w. Drlg. 5,230 ft.
Jones Assoc. No. 1 Wolfe, SE SW NW Sec. 13-22-4w. Simp. 4,451 ft.; dolo. 4,455 ft.; T.D. 4,549 ft.; D.P. stk.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; cd. 5,964-76 ft.; rec. sh.; cd. 6,351-76 ft.; rec. hd. sd.; T.D. 6,613 ft.; set 9-in. csg. 6,602 ft.; W.O.C.

Hughes County

Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. S.D. 3,098 ft.
Phillips Pet. Co. No. 1 Mandler, SE SW SW Sec. 1-6-10. Viola 5,357 ft.; dolo. 5,435 ft.; dolo. 5,510 ft.; Arb. 6,105 ft.; T.D. 6,153 ft.; D.&A.

Jackson County

Lippert No. 1 Howard, NE SW NW Sec. 10-3-19w; O.W.D.D. T.D. 1,675 ft.

Kay County

Cooper Drlg. Co. No. 1 Caughlin, SE NE SW Sec. 30-25-1. Drlg.
Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. T.D. 1,040 ft.; fsg.
C. C. Nye No. 1 Wolfenbarger, SW NW SW Sec. 16-27-4. T.D. 3,201 ft., sd.
Kaw Oil Co. No. 1 Wolfenbarger, NW NW SE Sec. 9-27-4. T.D. 60 ft.; S.D.; rprs.

Kingfisher County

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Drlg. 4,700 ft.

Kiowa County

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. Drlg. 410 ft.
R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. S.D. 520 ft.

Lincoln County

Fields & Nagle No. 1 Black, SE SE SE Sec. 31-16-6; O.W.D.D. T.D. 3,980 ft.; F. 20 B.O.P.D.

Muskogee County

Heydrick No. 1 Paschall, NE SE NW Sec. 22-13-19. S.D. 1,446 ft.

Okfuskee County

Carter & Hight No. 1 Rogers, SW SW SW Sec. 6-13-8. Drlg. 1,450 ft.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. Drlg. 1,800 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Drlg. 1,390 ft.

Payne County

Comail Oil Co. No. 1 Curran, SE SE SE Sec. 21-19-6. Drlg. 1,040 ft.
Starr O. & G. Co. No. 1 Georgia, SE SW NE Sec. 35-18-4. 1st Wlx. 4,051 ft.; 2d 4,083 ft.; T.D. 4,123 ft.; P.B. 3,490 ft.; drlg. cmt.

Pittsburg County

Phillips Pet. Co. No. 1 Hubacker, C NW NE Sec. 11-7-5. Drlg. 1,277 ft.

Pontotoc County

J. L. Casey No. 1 Pace, SW SW NE Sec. 14-2-7. Drlg. 1,438 ft.
H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.
Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. S.D. 4,100 ft.

Pottawatomie County

Wood Oil Co. No. 1 Peters, SW SE NW Sec. 28-8-4. Drlg. by whpstk. 3,927 ft.

Seminole County

Atlantic Ref. Co. No. 1 Atkinson, NW NW SW Sec. 17-6-6. Drlg. 3,525 ft.
Lesslie Rogers No. 1 Kidd, NE SW SE Sec. 33-10-8. T.D. 200 ft.; S.D.
H. S. Moss No. 1 Leachman, C N½ SE NE Sec. 34-10-6. Drlg. 521 ft.
W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. Set 8-in. 2,854 ft.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. Drlg. 400 ft.

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. Gas sd. 3,460-63 ft.; drlg. 3,895 ft.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.
Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 ft.

Washita County

Continental Oil Co. No. 1 Proctor C NW Sec. 28-10-20w. Rmg. at 8,947 ft.; T.D. 10,195 ft.
L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,190 ft.; fsg.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. Woodford 4,289 ft.; drlg. 4,455 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 1,385 ft.; U.R. at 1,339 ft.

Jefferson County

Bridwell Oil Co. No. 1-I Seay, SE NE SW Sec. 29-6s-5w. T.D. 1,519 ft., sd.; pmp. 15 B.O. and 100 B.W.
H. W. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. W.O.C. 102 ft.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; fsg. csg.

Tillman County

Smith No. 2 Hammel, NE NW NW Sec. 6-5s-15w. T.D. 2,380 ft.; recvd. D.P. and S.D.

ARKANSAS

Calhoun County

J. E. Murdock No. 1 Southern Craft Corp., SE cor. NW NW Sec. 17-14-13. Top Nac. 2,372 ft.; top Tokio 2,920 ft.; S.D. 3,291 ft.; M.I. fuel to dpn.

Columbia County

Atlantic Ref. Co. No. 1 Barnett, C SW SE Sec. 14-17-20. 10¾-in. csg. 2,250 ft.; T. por. oolitic L. 7,410 ft.; sat. L. 7,478-7,549 ft.; drld. to 7,610 ft.; 7-in. csg. 7,499 ft.; T.D. 7,610 ft.

W. L. Goidston No. 1 A. C. Garrett, C SE SW Sec. 13-17-20. Set 16-in. 134 ft.; 10¾-in. csg. 2,227 ft.; drlg. 3,154 ft.

Pet. Finance Co. No. 1 Garrett, C SW SW Sec. 13-17-20. M.I. rlg.

Alice Sydney Oil Co. No. 1 Crisp, Sec. 23-17-20. M.I. rig.

Southwood Oil Co., Inc., No. 1 J. O. Hutcheson, C NE SW Sec. 14-17-20. Drlg. gr. sh. 3,880 ft.

Standard Oil Co. of La. No. 3 Crone, SW cor. NE SW Sec. 8-16-22. Drlg. sh.& L. 5,092 ft.

Standard Oil Co. of La. No. 1 Lewis Unit, SE cor. NW NE Sec. 15-17-19. Drlg. sd.&sh. 6,252 ft.

Standard Oil Co. of La. No. 1 Minnie Harris, NE cor. NE SW Sec. 15-17-19. Drk.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. NL, 80 ft. EL, Sec. 35-14n-3e. Fsg. for bit 1,735 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; S.D. 670 ft.; rep. rig.

Lafayette County

Shell Pet. Corp. and Ohio Oil Co. No. 1 Warren, C SE SE Sec. 13-16-24. 13⅜-in. 194 ft.; 9⅝-in. 2,272 ft.; T. Bknr. 6,920 ft.; D.S.T. 7,169-7,228 ft.; shwd. S.W. and oil; tstg.; set 7-in. csg. 7,169 ft.; T. L. 7,165 ft.; T. por. L. 7,173 ft.; wtr. contact. 7,186 ft.; T.D. 7,225 ft.

Wadley-Erwin et al No. 1 G. W. Taylor, C NE SW Sec. 15-19-26. 13⅜-in. csg. 447 ft.; T. anhy. 5,322 ft.; T. massive anhy. 5,495 ft.; S.D., fuel, 5,735 ft.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cd. 1,270-80 ft.; sh.& wtr. sd.; S.D.; W.O.

Harford Oil Corp. No. 1 Pinning, C NE NE SW Sec. 6-13-30. S.D.; W.O. 1,-925 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co., Sec. 21-12-28. S.D. 3,661 ft.

Lonoke County

J. W. Eddington No. 1 Anderson. S.D. 900 ft.

Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. D.S. stuck 736 ft.

Miller County—Rodessa

Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 29-15-15. R.U.

F. W. Martin No. 1 Watson et al, SW cor. NW SE Sec. 2-20-28. Sat. L. 6,193-6,221 ft.; comp.; 396 B.P.D.; 18/16-in. ck.; T.P. 300 lbs.; C.P. 650 lbs.; 5½-in. csg. 6,188 ft.; T.D. 6,227 ft.

F. W. Martin No. 2-A Watts, 335 ft. E. 330 ft. N, SW cor. SW NE Sec. 2-20-28. Loc.

Normandie Oil Co. No. 1 Watson, 330 ft. S and E, C Sec. 2-20-28. Drlg. anhy. 5,312 ft.

Mrs. S. O. Thompson No. 1 Gen. Am. Life Ins. Co., SE cor. SE SW Sec. 20-14-26. Cd. 3,657 ft.; slightly por. sdy. L.; D.S. stk.; T.D. 3,825 ft.; D.S.T. 3,-677-95 ft.; tstd. 15 thribbles S.W.; 8 min.; S.D.; W.O.; 3,851 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n-12e. Top Nac. 2,160 ft.; set 7-in. csg. 2,897 ft.; drlg. hd. gr. L. 3,820 ft.

Nevada County

Benedum & Trees Oil Co. No. 1 T. Erby, SW cor. SW SW Sec. 3-14-20. M.I.R.

Webb & Franks No. 1 P. T. Grayson, SW cor. NW SE Sec. 4-14-20. Tokio sd.; D.S.T. 2,098-2,102 ft.; 10 min.; rec. 200 ft. oil and mud; open ck.; set 7-in. csg. 2,099 ft.; T.D. 2,102 ft.; W.O.C.

Texas Canadian Oil Co. No. 3 Stocks, C SW NE Sec. 9-15-22. 10-in. csg. 20 ft.; 7-in. csg. 1,341 ft.; T. Nac. 1,183 ft.; ripped csg. 1,204 ft.; bld. S.W.; W.O.C.

Ouachita County

Deep Rock Oil Corp. No. 1 C. Wesson, SE cor. NE Sec. 23-15-19. Set 13-in. csg. 350 ft.; drlg. rd. sh. 3,640 ft.

Union County—Schuler

E. M. Jones No. 1 J. C. Morgan, SE NW Sec. 13-18-18. Set 16-in. 144 ft. and 10¾-in. csg. 2,154 ft.; drlg. rd.&gr. sh. 5,990 ft.

E. M. Jones No. 2 J. C. Morgan, SE cor. NE NW Sec. 13-18-18. Drlg. r.&gr. sh. 4,232 ft.

Lion Oil Ref. Co. No. 3 Edna, SE cor. NE NE Sec. 18-18-17. T. Jones sd. 7,-574 ft.; 7-in. csg. 7,661 ft.; T.D. 7,675 ft.; perf. 7,592-7,606 ft.; comp.; 400 B. P.D.; 10/64-in. ck.; T.P. 900 lbs.; C.P. 1,050 lbs.

Lion Oil Ref. Co. No. 2 Henry, C N SE SE Sec. 12-18-18. R.U.&S.D.

Lion Oil Ref. Co. No. 6 Marcus, C Lot 3, SW Sec. 18-18-17. Set 16-in. csg. 114 ft.; 10¾-in. csg. 1,950 ft.; T. L. 7,625 ft.; T. Reynolds L. 7,633 ft.; T.D. 7,-735 ft.; 7-in. csg. 7,721 ft.; perf. 7,-664-68 ft.; comp.; 564 B.P.D.; ⅛-in. ck.; T.P. 1,800 lbs.; C.P. 2,150 lbs.

Lion Oil Ref. Co. No. 3 Sewell, NE cor. Lot 4, NW Sec. 18-18-17. 10¾-in. csg. 1,955 ft.; T. L. 7,641 ft.; T. Jones sd. 7,548 ft.; comp.; 27 B.P.H.; 18⅝ wash wtr.; 12/64-in. ck.; T.P. 1,075 lbs.; C. P. 1,000 lbs.; T.D. 7,732 ft.

C. H. Murphy et al No. 2 fee, NW cor. SW SE Sec. 13-18-18. T. Jones sd. 7,-558 ft.; T. por. L. 7,683 ft.; set 7-in. csg.; T.D. 7,700 ft.

Phillips Pet. Co. No. 1 Amanda, SE cor. NE SE Sec. 12-18-18. T.D. 6,747 ft.; hole cleaned; reconditioning mud.

Phillips Pet. Co. No. 2 Amanda, NE cor. NE SE Sec. 12-18-18. 10¾-in. csg. 2,-068 ft.; T. Jones sd. 7,563 ft.; cd. 7,-564-7,634 ft.; T.D. 7,725 ft.; set 7-in. 7,698 ft.; W.O.C.

Phillips Pet. Co. No. 2 Brian, C S½ NE SE Sec. 13-18-18. 10¾-in. 2,077 ft.; T. Jones sd. 7,519 ft.; T. L. 7,628 ft.; T.D. 7,700 ft.; set 7-in. csg. 7,676 ft.; perf. 7,548-77 ft.; comp.; 528 B.P.D.; ¼-in. ck. and 20/64-in. ck.; T.P. 825 lbs.; C.P. 600 lbs.

Phillips Pet. Co. No. 6 Sewell, NE cor. Lot 3, SW Sec. 7-18-18. 10¾-in. 2,071 ft.; T. Jones sd. 7,603 ft.; T.D. 7,765 ft.; set 7-in. csg. 7,744 ft.; perf. 7,622-50 ft.; comp.; 20 B.P.H.; ⅜-in. ck.; T. P. 600 lbs.; C.P. 200 lbs.

Phillips Pet. Co. No. 7 Sewell, NE cor. Lot 4, SW Sec. 7-18-18. Cd. to 7,638 ft.; T.D. 7,735 ft.; set 7-in. csg. 7,713 ft.

Phillips Pet. Co. No. 8 Sewell, SE cor. Lot 4, SW Sec. 7-18-18. T. Jones sd. 7,566 ft.; set 7-in. csg. 7,723 ft.; perf. 7,599-7,614 ft. and 7,621-38 ft.; comp.; 530 B.P.D.; 20/64-in. ck.; T.P. 725 lbs.; C.P. 625 lbs.; T.D. 7,750 ft.

Roberts & Murphy No. 3 Leona, NW cor. Lot 6, SW Sec. 7-18-17. Drlg. r.& gr. sh. 4,312 ft.

Union County—Other

Ark. Southern Oil Corp. No. 3-A Simmons, NW cor. NE NW Sec. 15-18-13. O.W.D.D. Graves sd. 2,612-29 ft.; tstd. gas; P.B. to Nacatoch sd.

J. R. Lockhart No. 1 P. W. Gaddy, NE cor. NW NW Sec. 13-17-14. T. Crain sd. 3,041 ft.; D.S.T. 3,019-56 ft.; rec. 1,000,000 cu. ft. gas and 240 ft. oil; 450 lbs. W.P.; set 5⅛-in. csg. 3,140 ft.; T.D.

J. R. Lockhart No. 1-A Raulston, NE cor. SW SE Sec. 12-17-14. D.S.T. 3,-007-37 ft.; ¼-in. B. and ½-in. T cks.; W.P. 100 lbs.; 3 min.; W.P. 210 lbs.; 9 min.; rec. drlg. mud and cut oil; rng. 7-in. csg. 3,037 ft.; tstd. S.W.; W.O.

J. R. Lockhart No. 3 Raulston, SE cor. NE SE Sec. 12-17-14. 10-in. csg. 105 ft.; W.O.C.

Mullins & Brooks et al No. 1 Nash, 500 ft. N and 338 ft. W of SE cor. NW SE Sec. 7-17-13. 10-in. csg. 148 ft.; D.S.T. 3,037-52 ft.; rec. 250 ft. oil and 30 ft. S.W.; 14-min.; W.P. 4 lbs.; top pay 3,232 ft.; 5½-in. 3,100 ft.; drld. out to 3,069 ft.; perf. 3,022-44 ft.; tstd. S.S.O.&G. and S.W.; W.O.

Mullins, Brooks et al No. 2 Nash, NE cor. NE SW Sec. 7-17-13. 10-in. 148 ft.

Sloan Wells, Tr., No. 4 G. J. Childs, 150 ft. NW cor. NE SW Sec. 8-16-16. O.W. W.O.; O.T.D. 2,656 ft.; S.D.; W.O.

NORTH MISSISSIPPI

Calhoun County

L. C. Lucas No. 1 E. C. Boland, 400 ft. E and 500 ft. S, NW cor. SW Sec. 9-22n-9e. S.D. 791 ft.

Clarke County

Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. S.D. 290 ft.

Hinds County

G. Jefferys No. 1 Gaddis Farms, Inc., NW cor. SE Sec. 26-7n-4w. S.D. 3,-448 ft.

Cleve Love et al No. 1 S. F. Johnson, NE cor. Sec. 29-6n-1w. S.D. 5,218 ft. sd.; arng. D.D.

Montgomery County

Dr. T. H. Chichester No. 1 Mitchell, Sec. 36-20n-7e. Drk.

Pontotoc County

Waldrop et al No. 1 Bray, Sec. 17-11s-1e. S.D. 310 ft.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor SW NE Sec. 1-10n-17w. S.D. 900 ft.

Goodwill O. & G. Co. No. 1 Berry, Sec 33-2n-4e. S.D. 2,810 ft.

Yalobusha County

Chas. W. Crader et al No. 1 John Bruce Jane, 990 ft. NE cor. Sec. 24-11s-6w. Top chk. 1,565 ft.; T.A. 2,002 ft., chk. S.D.; prep. to resume operation.

FLORIDA

Levy County

Florida Oil Discovery No. 2 Cedar Key Co., Sec. 9-15s-13e. S.D.; W.O.; T.D. 4,092 ft.

Nassau County

St. Mary Oil Corp. No. 1 Hilliard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; S.D.; fsg. for bit.

Lake County

Union O. & R. Co. No. 1 Gulf Expln., Sec. 17-24s-25e. S.D. 235 ft.

Suwanee County

J. W. Phillips Oil Explin. Co. No. 1 Shiikett, Sec. 14-4s-14e. Drlg. 150 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gayoso, 660 ft. SW cor. SE Sec. 14-16-10. T. Jeter 4,-262 ft.; D.S.T. 4,255-71 ft.; tstd. 70 ft. S.W. 8-min.; T. Pettit L. 5,043 ft.; D. S.T. 5,115-57 ft.; tstd. 35 ft. drlg. mud 20 min.; cg. hd. L. 5,179 ft.

Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. Set 13⅜-in. csg. 180 ft.; S.D. 2,-580 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE Sec. 28-19-11. T.D. 2,384 ft.; acd. with 1,000 gal.; csg. seat gave away; hole full S.W.; 5½-inch csg., 2,342 ft. pmpg. 5 B.O.P.D. and 25 bbls. S.W.; W.O. 2,432 ft.

Caddo Parish

R. E. Allison No. 3 Ellerbe, NE cor. Sec. 28-18-14. Loc.

Claude Bagley No. 1 Crystal fee, NE SW Sec. 24-21-16. Set 4½-in. csg. with pkr. 971 ft.; tstd. S.W. 982 ft.; plg. 4½-in. to deepen.

Carney et al No. 3 Hart, SE NW Sec. 21-21-16. Set 8-in. csg. 1,563 ft.; T.D 1,789 ft.; tstd. dry; W.O.

W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Set 6-in. csg. 1,945 ft.; T.D. 1,954 ft.; tstd. S.W. 1,954 ft. and P.B. 1,944 ft.; drld. out to 1,954 ft.; tstd. S.W.; sw. and abd. 1,954 ft.

Paul Cooper No. 2 Stiles, SW SE Sec. 28-21-16. Set 6-in. csg. 1,542 ft.; used 1,500 gal. acd. and tstd. dry; tstd. S.O. 1,851 ft.; drlg. to 1,977 ft.; tstd. S.W.; W.O.

L. L. Davidson No. 4 Muslow, NE SE Sec. 26-21-16. Drlg. plug 2,267 ft.; 6-in. csg. 2,234 ft.; recmtd. 6-in. csg. 2,-234 ft.; W.O.S.R. 2,257 ft.

R. E. Davidson No. 1 Herold et al, NW cor. SE NW Sec. 10-21-16. 6-in. csg. 1,036 ft.; tstd. S.W.; abd. 1,048 ft.

J. P. Driscoll et al No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 16-in. csg. 208 ft.; W.O.O.

Eagle Prod. Co. No. 1 Means, SE cor. NE Sec. 9-23-15. Ran Schlmb.; T.D. 6,004 ft.; perf. 5,775-5,815 ft.; tstd. gas and dist.; mudded off perf. and drld. to 6,-030 ft.; set pkr. below perf. and tstd. 600 ft. O.I.H.; acdz. and tstd. 5,000,-000 cu. ft. gas; think pkr. did not hold; T.D. 6,030 ft.; flwd. est. 2,000,-000 cu. ft. gas and 40 bbls. dist. per day; W.O. 6,030 ft.

W. C. Feazel et al No. 1 Hughes, 660 ft. SE cor. Sec. 33-18-14. 13⅜-in. 184 ft.; por. L. 5,555-73 ft.; set 5½-in. csg. 5,-589 ft.; perf. 5,565-70 ft.; comp.; 32 B. P.H.; 20/64-in. ck.; T.P. 500 lbs.; C.P. 1,075 lbs.; T.D. 5,590 ft.

Claude Ferguson No. 3 Lawhon, SW SE Sec. 7-20-15. Set 7-in. csg. 1,355 ft.; tstg. 1,570 ft.

H. C. Prod. Co. No. 1 Kinnebrew & Ratcliff, NE cor. Sec. 5-19-16. S.D. 2,216 ft.; high wtr.

Harry Hanbury No. 1 Sample, C SW SE Sec. 23-18-14. R.U.

Hurricane Pet. Corp. No. 1-B Chandler, C NW SE Sec. 34-18-14. 13⅜-in. csg. 178 ft.; set 9⅝-in. 1,620 ft.; el. 240 ft.; por. L. 5,605-12 ft. (gas) and 5,612-22 ft. (oil); 5½-in. csg. 5,663 ft.; T.D. 5,-676 ft.; perf. 5,615-18 ft.; comp.; 10 B. P.H.; ¼-in. ck. and 5,000,000 cu. ft. of gas; T.P. 700 lbs.; C.P. 1,450 lbs.

Hurricane Pet. Corp. No. 1 North, NW cor. SE NE Sec. 34-18-14. Set 9⅝-in. 1,637 ft.; drlg. sh.&L. 4,675 ft.

R. O. Kniveton No. 1 Kahn, NW cor. Sec. 35-18-14. Drlg. sh. 2,265 ft.

La. Oil Prod. Co. No. 15-B Muslow, Sec. 4-20-15. Set 7-in. csg. with 4½-ft. perf. on bttm. at 2,148 ft.; W.O.S.R.

Ben Levy No. 1 Crystal fee, SW cor.

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Sec. 25-21-16. Set 6-in. 1,350 ft.; tstd. dry 1,650 ft.

C. D. Loe No. 1 Meyer, SE cor. Sec. 33-18-14. Top Pettit 5,592 ft.; T.D. 5,628 ft.; perf. 5,602-25 ft. and tstd. S.W.; P.B. 5,611 ft.; 5½-in. csg. 5,627 ft.; T. D. 5,631 ft.; P.B. 5,583 ft.; drld. out to 5,610 and perf. 5,602-05 and tstd. S.W.; perf. 5,553-57 ft.; tstd. csg. and perf. 5,592-95 ft. Set tbg. with packer 5,600 ft. tstd. S.W. and S.O. 5,592-98 ft. and re-perf. 5,589-92 ft.; set pkr. 5,587 ft. and tstd. S.W. 5,600 ft.; S.O.; S.D.; W.O.; T.D. 5,598 ft.; O.T.D. 5,631 ft. set retainer plug 5,603 ft. and sqzd. perf. points and reperf. 5,590-5,600 ft.; tstd. oil; no S.W.; swbd. dry; S.O.; used 500 gal. acd.; flwd. by heads, est. 5 B.P.H.; 50% S.W.; ¼-in. ck.; stopped flwg.; drld. out cmt. to 5,631 ft. and arng. sqze. off all perf. pts.

McDonald & Campbell No. 2 Burton, NW cor. Sec. 7-20-15. 7-in. csg. 1,342 ft.; tstg. 1,583 ft.; comp.; pmpg. 10 B.P.D.

Magnolia Pet. Co. No. 5 Caddo Lvc. Bd., NE cor. Sec. 7-20-15. 6-in. 1,360 ft.; W.O.C.

Manziel et al No. 3 Ramsey, NE SE Sec. 32-21-15. Set 5½-in. csg. 1,348 ft.; acd. with 2,000 gal. at 1,590 ft.; W.O.S.R.

Oils, Inc., No. 1 Cazaux, SW cor. Sec. 10-16-13. O.W.W.O.; O.T.D. 3,500 ft.; wash to bttm., 3,500 ft.; S.D.

Sam Ripps No. 1 Chew-Lvy. Bd., Sec. 23-21-16. 8-in. csg. 1,025 ft.; tstd. S.W.; abd. 1,037 ft.

J. E. Sedberry No. 1-A Dickinson, SW cor. Sec. 10-19-14; O.W.W.O. O.T.D. 2,410 ft.; 4½-in. csg. 2,435 ft.; comp.; 25 B.P.D.; T.D. 2,459 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW Sec. 17-20-15. Pmpd. S.W.; O.T.D. 1,698 ft.; S.D. 2,150 ft.

R. W. Williams No. 2 Ark. Fuel, NW cor. SE SE Sec. 26-21-16. 10-in. 64 ft.; 5½-in. 2,230 ft.; W.O.S.R. 2,254 ft.

Caldwell Parish

G. W. Ziegen et al No. 15 Cent. La. Lbr Co., 1,650 ft. S, 330 ft. E. NW cor Sec. 32-15-2e. Drlg. 1,653 ft.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. 3,212 ft.

Claiborne Parish

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Hd. to slightly por L. 5,294-5,303 ft.; 5½-in. csg. 5,287 ft.; used 6,000 gal. acd.; swbg. to test; tstd. S.S.O. 5,324 ft.; split csg. 2,600 ft.; cmtd. csg.; swbd. dry; set tbg with pkr.; cannot cmt. off S.W.; T.D 5,234 ft.; set 4½-in. csg. 5,290 ft.; tstd. dry; S.O. 5,324 ft.; used 5,000 gal. acd.; swbg. to test; 2,000 ft. O.I.H.

De Soto Parish

S. S. Alexander No. 1-A Stoll, Sec. 5-12-16. Set 7-in. csg. 2,705 ft.; acd. with 3,000 gal. and tstd. est. 2,000,000 ft. gas; 400 lbs.; gas exhausted; 1,000 ft. O.I.H., 2,761 ft.; did not pmp. at 2,-761 ft.; wsg. to bttm. 2,853 ft.

Paul Miller No. 2 Jal Drlg. Co., NE Sec. 5-11-11. Set 7-in. csg. 4,038 ft.; perf. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.; O.T.D. 4,205 ft.; perf. csg. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.

Tippett Oil Corp. No. 1 Williams, SE cor. Sec. 31-13-11. Set 7-in. csg. 1,165 ft.; tstd. S.W. 1,410 ft. P.B. 1,335 ft. and acd. 3,000 gal.; tstd. S.W. 1,360 ft.; abd.; T.D. (P.B.) 1,360 ft.

Grant Parish

Long & Porter No. 1 Swope, SE cor. NW SE Sec. 18-9-1e. 10-in. csg. 84 ft. set 6-in. csg. 1,610 ft.; T.D. 1,625 ft.; comp.; pmpg. 35 B.P.D.

La Salle Parish

Alfred Black, Tr., No. 1 Wright, Sec. 35-10-1e. R.U.

Pet. Heat & Power Co. No. 3 Richardson, SE cor. Sec. 3-9-1e. 6-in. csg. 1,-515 ft.; T.D. 1,520 ft.; comp.; pmpg. 40 B.P.D. and 200 bbls. S.W.

G. C. Walsenham No. 1 Dean, NW cor. SE Sec. 23-9-1e. 6-in. csg. 1,595 ft.; tstd. S.W.; S.O.; sd. 1,602-05 ft.; T.D. 1,654 ft.

Madison Parish

Continental Oil Co. No. 3 Singer, C S SW NW Sec. 2-15-11e. Drlg. sdy. sh. 3,240 ft.

Natchitoches Parish

Jack Lent et al No. 1 Whatley, SW cor. Sec. 17-10-10. S.O.&G. reported at 1,-490-1,516 ft.; T.D. 1,516 ft.; D.S.T. 1,-470-56 ft.; tstd. dry in 20 min.; did not set csg.; drlg. ch. rk. 1,630 ft.

Red River Parish

Crow Drlg. Co. No. 1 Crichton, 990 ft. S and E, C Sec. 17-13-10. Set 4½-in. csg. 2,540 ft.; T.D. 2,545 ft.; arng. test 2,562 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec. 20-13-10. 5¾-in. csg. 2,510 ft.; D.D. 2,-560 ft.; W.O.S.R.

H. B. Schumacher No. 1 Crichton, SW cor. NW Sec. 18-13-10. 10-in. 46 ft.

Sabine Parish

Clyde Creighton No. 1 Bowman Hicks, C NE NW Sec. 3-7-12. 10-in. csg. 60 ft. 7-in. csg. 2,422 ft.

Earl F. Fox No. 1 Cook Ld. Co., SW cor. SE NW Sec. 1-9-12; O.W.W.O. O.T.D. 3,655 ft.; arng. dpn. 3,655 ft

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; cond. mud 3,642 ft.; arng. set 7-in. 3,500 ft.; T.D. 3,642 ft.

Hunter Co. No. 8 Bowman Hicks, C NE NW Sec. 13-7-13. R.U.

LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Tstd. dry 2,-130 ft.; tstd. S.G.; acd. with 1,000 gal.; tstd. dry 2,340 ft.; did not acd.; tstd. S.W.; S.O. 2,340 ft.; 500 ft. O.I.H.; used 3,000 gal. acd.; tstd. S.O. 2,340 ft.; will set short string 4-in. csg. 2,-340 ft.; W.O.S.R.; 800 ft. O.I.H.

Major Oil Co. No. 2 Sabine, NW cor. NW NE Sec. 12-7-13. Comp.; pmpg. 115 B. P.D.; sd. 2,578-82 ft.

H. L. Nutting No. 1 Williams, SW cor. Sec. 13-7-11. T.D. 3,130 ft.; used 3,000 gal. acd.; swbg. S.W. 2,860 ft.; will P. B. 2,755 ft.; tstd. S.W.; P.B. 2,730 ft.; acdz.; tstd. S.W.; S.O. 2,730 ft.; S.D.: T.D. 2,730 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft.; P.B. 2,585 ft.; tstd. dry; acdz. and tstd. dry; tstd. S.S.O. 2,585 ft.

M. S. Slagle et al No. 1 Chadwick, SW cor. SE NW Sec. 32-8-10. Set 6-in. csg. 2,590 ft.; swbg. S.W.; T.D. 2,649 ft.; rep. rig; tstd. S.W.; D.&A. 2,649 ft.

C. H. Smith No. 1 Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Set 10-in. csg. 66 ft.

Sutton Zwolle Oil Co. No. 2 Sabine, NW cor. NE NW Sec. 23-7-14. R.U.

Tensas Parish

H. V. Schumacker No. 4 Mound Plantation, Sec. 29-11-12e. Rmg. to bttm.; T. D. 2,450 ft.; S.D. for D.S.T. 2,450 ft.

Webster Parish

R. L. Fisher et al No. 1 S. P. D. Coyle, 660 ft. N and 1,880 ft. E of SW cor. Sec. 23-21-10. Holly. sd. 5,544-59 ft. and 5,809-16 ft.; set 5½-in. csg. 5,782 ft.; T.D. 5,998 ft.; tstd. S.G.; W.O. 5,998 ft.

Hunt Oil Co. No. 4 Bodcaw-Stewart, 2,-155 ft. N and 660 ft. E. SW cor. Sec. 34-21-10. Holly. sd. 5,821-47 ft.; set 9⅝-in. csg. 5,802 ft.; tstg. 5,966 ft.

Hunt Oil Co. No. 5 Bodcaw-Stewart, NW cor. NE Sec. 33-21-10. R.U.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Hollwy. sd.; top "D" sd. 8,534 ft.; S.O. 8,534-50 ft.; "D" sd. 8,537-68 ft.; Bodcaw sd. 8,628-68 ft.; set 7-in. csg. 8,715 ft.; perf. csg. 8,540-65 ft. and tstd. S.W.; tstd. dry 8,538-40 ft., 8,540-42 ft., 8,542-44 ft., and 8,544-46 ft.; perf. again at 8,543-46 ft.; tstd. dry 8,543-46 ft.; sqzd. off perf.; arng. dpn.

Hunt Oil Co. and Stanolind O. & G. Co. No. 1 Coffee-Webster Inv. Co. Unit, C NE NW Sec. 36-31-10. 13⅜-in. csg. 677 ft.; no Holly. sd.; set 9⅝-in. csg. 5,-780 ft.; drlg. 6,546 ft.

Hunt Oil Co. No. 5 Webb, 75 ft. W. C SE NE Sec. 14-21-16. Drlg. sh. 2,290 ft.

Magnolia Pet. Co. No. 4 Branton, NE cor. Sec. 6-22-9. 9⅝-in. csg. 5,933 ft.; T. lower Marine 7,750 ft.; T. Bodcaw sd. 8,193 ft.; S.W.; drlg. sdy. L. 8,733 ft.

Magnolia Pet. Co. No. 1 Cox. C NW SW Sec. 15-21-10. Set 13⅜-in. csg. 847 ft.; drlg. anhy. 4,164 ft.

Magnolia Pet. Co. and Ohio Oil Co. No. 1 Coyle-Hodges Unit, SW cor. NW Sec. 21-21-10. Set 13⅜-in. csg. 854 ft.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. Set 13⅜-in. csg. 887 ft.; T. Pettit L. 5,725 ft.; S.O. 5,764-66 ft.; T. Tr. Pk. 5,900 ft.; set 9⅝-in. csg. 5,962 ft.; drlg. r.b. 6,100 ft.

North American Oil Consol. Co. No. 4 Stewart-Coyle, C NW SE Sec. 29-21-10. Top "D" sd. 8,339 ft.; T. Bodcaw sd. 8,430 ft.; Davis sd. 8,684-8,715 ft.; odor gas and dist.; set 7-in. csg. 8,717 ft.; perf. 7-in. csg. 8,432-62 ft.; comp.; 370 bbls. in 18 hrs.; ½-in. ck. and est. 5,000,000 cu. ft. gas; T.P. 2,500 lbs.; C.P. 2,700 lbs.; T.D. 8,727 ft.

Oliphant Oil Corp. No. 1 Gray & Stephens, C SE SW Sec. 35-21-10. Top Tr. Pk. 5,882 ft.; Hollwy. sd. 5,975-88 ft.; 9⅝-in. csg. 5,595 ft.; T. "D" sd. 8,399 ft.; drlg. sd. 8,401 ft.

Oliphant Oil Corp. No. 1-A Hodges, C NW NE Sec. 3-20-10. Top Tr. Pk. 5,995 ft.; no Holl. sd.; set 9⅝-in. csg. 5,610 ft.; drlg. sh.&sd. 7,182 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,615 ft.; top "D" sd. 8,594 ft., S.W.; T. Bodcaw 8,684 ft.; 7-in. csg. 8,672 ft.; tstd. S.O.&G. and S.W. 8,692 ft.; D.S.T. failed; used 2,000 lbs. input gas and tstd. 55 bbls. dist. and 103 bbls. S.W. per day; tstd. dry 8,-715 ft.; top Davis sd. 8,930 ft.; drlg. sdy. sh. 9,161 ft.

Stanolind O. & G. Co. and W. Delaney No. 1 Pardee-Coffee Unit, C NE Sec. 36-21-10. T. Tr. Pk. 5,932 ft.; no Holloway sd.; set 9⅝-in. csg. 5,955 ft.; drlg. sh.&sd. 7,544 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. Set 9⅝-in. csg. 6,490 ft.; T.D. 6,500 ft.; W.O.C.

Woodley Pet. Co. No. 1 J. O. Couch, C NW SW Sec. 36-21-10. Drlg. sd.&sh. 8,403 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 4 Columbia Ld. & Tbr. Co., Sec. 16-6s-13w. T.D. 7,335 ft.; tstg.

Republic Prod. Co. No. 5 Columbia Ld. & Tbr. Co., Sec. 15-6s-13w. T.D. 7,340 ft.; W.O.C.

Republic Prod. Co. No. 4 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. S.D. 1,458 ft.

Republic Prod. Co. No. 1 Louis Whitman, Sec. 15-6s-13w. Drlg. sh. 3,212 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. Driving piling.

Baton Rouge—East Baton Rouge Parish

Geo. Helis et al No. 1 McInnis, Sec. 36-8s-1w. Loc.

Wm. Helis et al No. 3 Harry B. Nelson, Sec. 36-7s-1w. 10¾-in. csg. 2,072 ft.; drlg. plug.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 3 Schwing Lbr. Co., Sec. 66-9s-11e. Drlg. sh. 7,758 ft.

Bayou Bouillon—St. Mary Parish

Transcontinental Oil Co. No. 5 State, Sec. 13-9s-9e. T.D. 1,275 ft.; 10¾-in. csg. 1,170 ft.; T.D. 3,100 ft.; P.B. 1,700 ft.; prep. to sdtrk. 1,400 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader No. 5 Schwing, Sec. 29-8s-11e. 9⅝-in. csg. 2,250 ft.; T.D. 4,755 ft.; P.B. 4,200 ft.; sdtrkd. 4,214 ft.; T.D. 7,878 ft.; P.B. 7,530 ft.; stk. D.S. P.B. 5,800 ft.; sdtrkd.; T.D. 5,890 ft.; P.B. 5,200 ft. to sdtrk.

La. Crusader No. 6 Schwing, Sec. 29-8s-11e. R.U.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 3 St. Charles Ld. Co., Sec. 13-15s-20e. R.U.

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 2 L.L.&E., Bay St. Elaine, Sec. 18-22s-18e. Drlg. sh. 1,515 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. T.D. 6,463 ft.; P.B. 5,-430 ft.; sdtrkd.; drlg. sdy. sh.&shls.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; T.D. 6,564 ft.; fsg.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 5 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. R.U.

Sun Oil Co. No. 4 Dibert Stark and Brown Cypress Co., Sec. 70-15s-15e. Drlg. sh.&sdy. sh. 7,070 ft.

Charenton—St. Mary Parish

Edwards & Aber No. 2 Blanchard, Sec. 21-13s-9e. T.D. 1,148 ft.; 5½-in. csg. 1,141 ft.; tstd. S.W.; P.B. 1,132 ft.; perf. csg. 1,125-32 ft.; W.O.S.R.

Edwards & Aber No. 1 Lebland, Sec. 21-13s-9e. Top sd. 1,119 ft.; T.D. 1,123 ft.; W.O.S.R.

Kinney Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 1 Law Realty, Sec. 31-13s-10e. Drlg. sh. 7,-312 ft.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16. 13¾-in. csg. 1,-492 ft.; drlg. sdy. L. 7,677 ft.

Creole—Cameron Parish

Superior Oil Co. et al No. 4 State-Gulf of Mexico, Twp. 15s-8w. T.D. 5,150 ft.; prep. to test.

Darrow—Ascension Parish

Humble O. & R. Co. No. 20 Community. Sec. 30-10s-2e. 10¾-in. csg. 3,122 ft.; drlg. plug.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s 2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 22 State, Sec. 5-22s-16e. 13⅜-in. csg. 2,030 ft.; T.D. 6,027 ft.; P.B.; sdtrkd.; T.D. 6,602 ft.; trying to sdtrk. at 6,208 ft.; drlg. sh. 6,485 ft.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. 7-in. csg. 2,804 ft.; T.D. 2,817 ft.; bailed S.W.; pig. screen.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Drlg. sdy. sh. 9,910 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 2 Rek, Sec. 40-17s 15e. Drlg. sh. 10,481 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 31 State, Sec. 28-23s-33e. Cg. sdy. sh. 5,551 ft.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 12 State, Sec. 12-9s-8w. T.D. 9,070 ft.; P.B. 8,613 ft.; set retainer at 6,793 ft.; perf. csg. 6,-780-90 ft.; tstg.

Golden Meadows—La Fourche Parish

Martex Pet. Corp. No. 1 Falgout Holding Co., Inc., Sec. 9-19s-22e. Drk.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 3 Grand Prairie, Sec. 6-20s-19e. 20-in. csg. 70 ft.; 13⅜-in. csg. 1,600 ft.; drlg. sdy. sh. 6,144 ft.

Hackberry—Cameron Parish

F. W. Bennett No. 1 Bickford, Sec. 37-12s-10w. Drlg. sh. 4,312 ft.

L. W. Capps et al No. 1 Duhon, Sec. 27-12s-10w. T.D. 3,487 ft.; 7-in. csg. 3,-271 ft.; pmpd.; recvd. no fluid; S.D.

Stanolind O. & G. Co. No. 56 State, Kelso Bayou, Sec. 22-12s-10w. Drlg. sh. 3,098 ft.

Superior Oil Co. No. 5 Benson Vincent, Sec. 30-12s-10w. Drlg. 8,650 ft.

Texas Co. No. 16-B State-Hackberry, Twp. 12s-9w. Drlg. sh. 8,172 ft.

Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft.; 7-in. csg. 8,050 ft.; perf. csg. 7,90s-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf. csg. 7,763-74 ft.; W.O.S.R.

Union Sulphur Co. No. 11 Doiron, Sec. 37-12s-10w. Drlg. sh. 6,879 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e. 9⅝-in. csg. 11,631 ft.; T.D. 12,768 ft.; rmg.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Adeline Sugar Co., Sec. 39-13s-9e. Drlg. sh. 9,130 ft.

Herton Oil Co. No. 9 Carter, Sec. 38-13s-9e. Drlg. sd.&sh. 10,136 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 2 Jefferson Island, Sec. 58-12-5e. 18⅝-in. csg. 40 ft.; drlg. L.& sh. 6,412 ft.

Texas Co. No. 2 State-Lake Peigneur, Twp. 12s-5w. Drk.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, Sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,-732 ft.; trying to drill by fish; P.B. 6,104 ft.; W.O.C.; sdtrkd. 6,020 ft.; T.D. 6,056 ft.; 7-in. csg. 2,203 ft. and 10¾-in. csg. 2,108 ft.; sdtrkd.; drld. into old hole; P.B.

A. W. Forrester No. 1 Jules Clement, Sec. 46-9s-2w. T.D. 3,060 ft.; S.D.

Glassell & Glassell No. 7 Trushel, Sec. 42-9s-2w. T.D. 7,628 ft.; 7-in. csg. 7,-624 ft.; perf. csg. 7,155-85 ft.; comp.; no ga.

Gulf Ref. Co. No. 1 Lamb, Sec. 45-9s-2w. Drlg. sh. 6,980 ft.

Jolly Pet. Co. No. 3 McFarlain, Sec. 41-9s-2w. T.D. 7,288 ft.; comp.; no ga.

L. & L. Oil Co. No. 4 Houssiere Latreille, Sec. 47-9s-2w. T.D. 1,825 ft.; 7-in. csg. 1,817 ft.; T.D. 1,881 ft.; pmpd. dry; S.D.

Port City Oil Co. No. 23 Jennings Haywood, Sec. 41-9s-2w. T.D. 2,761 ft.; 7-in. csg. 2,300 ft.

Shell Pet. Corp. No. 5 Community, Sec. 40-9s-2w. T.D. 7,892 ft.; P.B. 6,113 ft. I.P. 230 B.P.D.; ¾-in. ck.; perf. csg. 5,940-86 ft.

Shell Pet. Corp. No. 1 Prather.

Stanolind O. & G. Co. No. 114 Crowley Oil & Mineral Co., Sec. 48-9s-2w. R.U.

Superior Oil Co. No. 16 Wm. Leckelt, Sec. 42-9s-2w. Drlg. sh. 6,620 ft.

Lafitte—Jefferson Parish

Texas Co. No. 2 Lafitte, Sec. 19-17s-24e. T.D. 10,072 ft.; (corrected); perf. csg. 10,040-69 ft.; I.P. 1,575 B.P.D.; ⅝-in. ck.

Texas Co. No. 4 Madison Realty Co., 17s-24e. T.D. 10,134 ft.; 7⅝-in. csg. 10,-132 ft.; perf. csg. 9,980-95 ft.; I.P. 1,-264 B.P.D.

Texas Co. No. 1 Sch. Bd., Sec. 16-17s-24e. 13⅜-in. csg. 2,030 ft.; T.D. 10,622 ft.; 9⅝-in. csg. 10,622 ft.; drlg. sh.& L. 11,333 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp.-Humble O. & R. Co. No. 9 La Fourche Basin, Sec. 2-18s-25e. Drlg. sh. 1,009 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 22 State, Sec. 8-23s-18e. T.D. 6,027 ft.; sdtrkd.; drlg. sh. 4,-730 ft.

Leeville—La Fourche Parish

Lincoln Oil Co. No. 2 Visier, Sec. 26-21s-22e. T.D. 4,188 ft.; P.B. 3,660 ft.; run screen.

Texas Co. No. 7 Leeville, Sec. 27-21s-22e. T.D. 8,667 ft.; D.S. stk.; sdtrkd.; T.D. 8,436 ft.; sdtrkd.; T.D. 8,685 ft.; stk. 9⅝-in. csg. at 8,577 ft.; sdtrkd. 8,440 ft.; stk. D.S.; sdtrkd.; T.D. 9,-682 ft.; rmg.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 2 H. J. Ellender, Sec. 32-19s-19e. Spd.

Humble O. & R. Co. No. 1 Laterre, Inc., Sec. 31-19s-19e. 13⅜-in. csg. 3,174 ft.; T.D. 11,680 ft.; 7-in. csg. 8,422 ft.; perf. csg. 8,450-55 ft.; I.P. 2,976,000 cu. ft. gas; ¼-in. ck.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 7 State-Lake Long, Twp. 17s-19e. 18⅝-in. csg. 295 ft.; T. D. 10,248 ft.; 7-in. csg. 9,928 ft.

New Iberia—Iberia Parish

Canal Oil Co. No. 7 Bernard, Sec. 54-12s-7e. T.D. 5,620 ft.; perf. csg. 4,632-60 ft.; tstg.

Wm. Helis No. 5 Schwing, Sec. 56-12s-7e. T.D. 4,954 ft.; P.B. 4,188 ft.; W. O.C.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 2-A Hanzon, Sec. 54-12s-7e. R.U.

Texas Co. No. 3-B Hanszen, Sec. 54-12s-7e. T.D. 6,856 ft.; 7-in. csg. 6,838 ft.; tstg.

Texas Co. No. 1 Renaudet et al, Sec. 71-12s-7e. Drlg. sh.&L. 5,720 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 3 H. T. Hebetz, Sec. 45-8s-1e. T.D. 8,748 ft.; 7-in. csg. 8,748 ft.; tstd. S.W. 8,577-79 ft.; P.B. to test; 8,100-ft. sd.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 1 Alcide Fournerat, Sec. 11-7s-2w. Drlg. 6,215 ft.
Atlantic Ref. Co. No. 3 Klumpp, Sec. 13-7s-2w. Drlg. 7,967 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nezat. R.U.
Y. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 37 Orleans Lv. Bd., Sec. 23-18s-15e. T.D. 3,138 ft.; rng. 13⅜-in. csg. 3,061 ft.; cd. sd. O.S. 8,-065-70 ft.; showed 3 ohms resistivity on electrical survey; rmg.
Western Gulf Prod. Co. No. 1 Paseale. Sec. 6-18s-27e. Loc.
Western Gulf Prod. Co. No. 1-A Treadway, Sec. 6-18s-27e. Loc.; (cor.).

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 2-A Orleans Levee Bd., Sec. 7-19s-17e. Drlg. sd.&bldrs. 1,-913 ft.
Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

South Houma—Terrebonne Parish

Shell Pet. Corp. No. 2 Peters. Drlg. sh. 5,307 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; T.A.
Amerada Pet. Corp. et al No. 2 Godchaux, Sec. 34-15s-19e. Drlg. sh. 2,810 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 2 Sturdivant, Sec. 36-10s-4w. Loc.
Union Sulphur Co. No. 2 T. R. S. Farms, Sec. 23-10s-4w. T.D. 10,954 ft.; (cor.). sdtrk. 9,075 ft.; drilled to 9,266 ft.; stuck D.S.; P.B. 8,860 ft.; sdtrkd.; T.D. 10,-177 ft.; cleaned hole; rmg.; drlg. out cmt. 10,022 ft.

Starks—Calcasieu Parish

J. R. Turnbull et al No. 6 Industrial Lbr. Co., Sec. 30-9s-12w. T.D. 1,929 ft.; S.D.

Sweet Lake—Cameron Parish

Pure Oil Co. No. 1 Stanolind O. & G. Co. fee lse., Sec. 12-13s-8w. Drlg. sd.&sh. 6,919 ft.; no report.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 3 State (O.W.D.D.), Sec. 36-23s-21e. O.T.D. 8,728 ft.; P.B. sdtrkd.; T.D. 6,795 ft.; 7-in. csg. 6,758 ft.; O.S. 6,792-95 ft.; I.P. 184 bbls. net oil per day plus 20% S.W.; ¾-in. ck.
Gulf Oil Corp. No. 4 State, Sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,-668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft., salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. 3,504 lbs. press.; reset screen; would not flow; reset screen; bailed dry; P.B. 5,345 ft.; perf. csg. 5,330-40 ft.; swbd. dry.; flwg. 11 B.O.P.D.; ¼-in.. ck.; T.P. 60 lbs.; tstg.

Valentine—La Fourche Parish

Pan American Prod. Co. No. 2-A Community, Sec. 58-17s-20e, T.D. 9,629 ft.; tried to blow out; P.B. 7,983 ft.; sdtkd.; 8,020 ft.; drlg. out cmt. 8,445 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 9 Manhattan Land & Fruit Co., Sec. 26-21s 30e. 10¾-in. csg. 2,457 ft.; top salt 5, 505 ft.; T.D. 5,565 ft.; sdtrkd. 4,647 ft.; top salt 5,603 ft.; P.B. 3,725 ft.; to sdtrk.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Fontenot-Deshotels, Sec. 44-3s-2e. Loc.
Continental Oil Co. No. 1 Fontenot Ludean, Sec. 45-3s-2e. Drk.
Continental Oil Co. No. 3 Piere McDaniel, Sec. 44-3s-2e. Cg. sd. 9,039 ft.
Continental Oil Co. No. 2 Petre, Sec. 44-3s-2e. Cg. sd. 9,050 ft.
Continental Oil Co. No. 2 Vidrine, Sec. 34-3s-2e. Loc.
Texas Co. No. 2 fee, Sec. 27-3s-2e. T.D. 8,988 ft.; 6⅝-in. csg. 8,958 ft.; comp.; no ga.

Vinton—Calcasieu Parish

J. M. Donald et al No. 1 Gordon, Benchenstein-Flynn, Sec. 34-10s-12w. T.D. 1,000 ft.; W.O.C.
C. A. Richardson et al No. 1 Vincent, Sec. 34-10s-12w. Drlg. sh. 2,011 ft.; no report.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Adam, Comier, Sec. 5-12s-2w. Drlg. sh. 7,740 ft.

West Lake Verret—St. Martin Parish

Shell Pet. Corp. No. 2 Jeanerette, Sec. 14-14s-12e. Cg. sdy. sh. 7,281 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 2 Osmon, Sec. 7 9s-5w. Drlg. sh. 7,013 ft.
Union Sulphur Co. No. 1 A. H. Thomas, Sec. 12-9s-6w. Drlg. sh.&L. 9,503 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Tennark, Inc., No. 1 C. J. Freeland, Sec. 64-7s-2e. Drlg. sh. 7,350 ft.; no report
Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farewell Co., Inc., Sec. 79-14s-14e. 13⅜-in csg. 2,978 ft.; drlg. sh.&sd. 8,-545 ft.

Avoyelles Parish

Sid Richardson No. 1 Haas Inv. Co., Sec. 7-2ss-3e. T.D. 8,581 ft.; cd. sd.&sh., O. &G. odor, 8,450-8,520 ft.; 5½-in. csg. 8,574 ft.; perf. csg. 8,445-8,550 ft.; I.P. 275 bbls. 43-grav. oil per day; ¼-in. ck.; T.P. 1,650 lbs.; C.P. 1,750 lbs.

Calcasieu Parish

David B. MacDaniel No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; T.D. 7,890 ft.; S.D.

Cameron Parish

Humble O. & R. Co. No. 1 Sweet Lake Ld. & Oil Co., Sec. 6-12s-6w. T.D. 8,-734 ft.; abd.
Superior Oil Co. et al No. 1 Delmer, Sec. 32-14s-8w (core test). R.U.

Iberia Parish

Texas Co. No. 1 Petit Anse, Sec. 59-13s-6e. R.U.
Texas Co. No. 2-B Vermilion Bay, Twp. 16s-5e. T.D. 9,667 ft.; R.U. to W.O.

Iberville Parish

California Co. No. 1 Schwing Lbr. Co., Sec. 96-10s-10e. 20-in. csg. 177 ft.; drlg. sh. 5,820 ft.
Humble O. & R. Co. No. 1-B A. Wilberts Sons Lbr. Co., Sec. 78-8s-8e. 13⅜-in. csg. 1,993 ft.
Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e. Drlg. sh. 2,256 ft.

La Fourche Parish

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. Drlg. sh.&sd. 8,-057 ft.
Texas Co. No. 1 State-Catfish Lake, Sec. 77-19s-21e. 18⅝-in. csg. 90 ft.; T.D. 8,-205 ft.; D.S. stk.; P.B. 5,783 ft.; sdtrkd.; drlg. sdy. sh. 5,872 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Cd. 10,184-10,214 ft.; formation had small amt. of oil and slight gas show; T.D. 10,-680 ft.; S.W.; abd.
W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. M.I.M.
W. T. Burton No. 2 L.&N.R.R., Sec. 1-12s-14e. Abd. loc.
W. T. Burton No. 3 L.&N.R.R., Sec. 25-11s-14e. Loc.
W. T. Burton No. 1-B R. E. E. de Montluzin, Sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,165 ft.; 9⅝-in. csg. 8,165 ft.; T.D. 8,241 ft.; tstd. S.W.; D.S.T. 8,135-8,-241 ft.; T.D. 11,149 ft.; cutting and pulling stk. D.S.

Plaquemines Parish

Texas Co. No. 1 L.L.&E. Bastian Bay, Sec. 43-20s-28e. Drlg. sh. 6,469 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,-161 ft.; drlg. sdy. sh.&L. 9,918 ft.
Wm. Helis et al No. 1 Mereaux Munez, Sec. 34-12s-12e. Drlg. sh. 8,530 ft.
Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 59-13s-14e. Drlg. sh. 9,412 ft.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. Drlg. sh. 7,469 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. Cg. sh. 8,575 ft.

St. Martin Parish

Magnolia Pet. Co. No. 1 Mercelin, Sec. 8-10s-7e. Loc.
Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D. 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,-175 ft.; drld. out to bttm.; P.B. 8,080 ft.; perf. csg. 8,060-70 ft.; tstd. mud, gas and S.W.; sqzd. off perf.; perf. csg. 8,060-65 ft.; tested 38 stands oil and gas showing fresh wtr.; set screen and lnr.; pmpg.; showing est. 25 B.O.; 7 hrs.; tstg.

St. Mary Parish

Phillips Pet. Co. No. 1 Whitney Natl. Bnk., Sec. 13-15s-12e. Spd.
J. Perry Scranton et al No. 1 Martinez, Sec. 133-15s-17e (core test). Drlg. 937 ft.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, Sec. 33-7s-15e. Drk.

Terrebonne Parish

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; T.D. 10,039 ft.; P.B. 9,852 ft.; sdtrkd. 9,984 ft.; drlg. sh. 12,432 ft.
Texas Co. No. 2 State-Coon Point, Twp. 23s-14e. 13⅜-in. csg. 1,900 ft.; T.D. 2,-851 ft.; driving piling.

West Baton Rouge Parish

Humble O. & R. Co. No. 1 S. A. Levert, Sec. 5-8s-12e. T.D. 8,015 ft.; abd.

TEXAS

Week Ending January 21

GULF COAST FIELDS

Hastings Field—Brazoria County

Humble O. & R. Co. No. 2 Lerew, C. W. Groos Sur., Sec. 38. Loc.
Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.

Old Ocean—Brazoria County

Commerce Oil Co. No. 1 S. M. Patterson, Polly & Chance Sur. 9⅝-in. csg. 7,000 ft.; run electrical cg. survey; T. D. 10,400 ft.
Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. Drlg. sh. 9,369 ft.
Harris & Abercrombie No. 4 Armstrong, Polly & Chance Sur. T.D. 10,670 ft.; run electrical survey.
Harrison & Abercrombie No. 6 Bernard River Ld. & Dev. Co., C. Breen Sur. Loc.
Harrison & Abercrombie No. 3 Chenault, C. Breen Sur. Drlg. sd., sh.&L. 10,-164 ft.
Harrison & Abercrombie No. 1 Lola Buck, Polley & Chance Sur. Drlg. sh. &L. 6,312 ft.
Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. T.D. 10,400 ft.; perf. csg. to test.

Cedar Point—Chambers County

Standard Oil Co. of Texas No. 35-118 State. W.O.C. 6,021 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 5 Acom, H.T.&B. Sur. No. 103. 10¾-in. csg. 1,945 ft.; T.D. 8,565 ft.; 7-in. csg. on bttm.; perf. csg. 8,500-22 ft.; rng. screen.
Sun Oil Co. No. 3-A White, H.T.&B. Sur. No. 118. 10¾-in. csg. 1,910 ft.; T.D. 8,526 ft.; 5½-in. csg. 8,526 ft.

West Columbia

Texas Co. No. 30 Abrams, G. Tennille Sur. Drlg. sd.&L. 3,886 ft.

League City—Galveston County

Geo. Echols No. 2 J. H. Ross, Perry & Austin Sur. 10¾-in. csg. 2,550 ft.
Gulfboard Oil Corp. et al No. 1 Ross-Stewart, Perry & Austin Sur. 10¾-in. csg. 3,100 ft.; drlg. sh. 6,150 ft.
Phillips Pet. Co. No. 1 Brittnacher, S. F. Austin Sur. R.U.
Phillips Pet. Co. No. 1 J. C. Ott, S. F. Austin Sur. Cg. sh. 8,705 ft.
Phillips Pet. Co. No. 1 Dr. Patton, S. F. Austin Sur. Cg. sh. 10,030 ft.
Phillips Pet. Co. No. 1 Stewart, Title Guaranty, S. F. Austin Sur. Cg. sh. 8,811 ft.
West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

Hamil & Smith No. 1 Majorwitz, W.C.R. R. Sur. No. 10, Blk. 4. Cg. 6,310 ft.
H. M. Harrell et al No. 1 John Ehrhardt, W. P. Ketchum Sur. Loc.

Clear Lake—Harris County

Humble O. & R. Co. No. 3-C Humble-West fee, Geo. B. McKinstry Sur. Drlg. sh. 2,836 ft.
Humble O. & R. Co. No. 4-C Humble-West, Geo. B. McKinstry Sur. Drlg. sh. 2,836 ft.
Stanolind O. & G. Co. No. 1 Geo. Sowden, Jas. Lindsey Sur. T.D. 5,861 ft.; 7-in. csg. 5,848 ft.; tstd. S.W. on D.S. T.; P.B.; comp.; for gas well.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 W. T. Helberg, H Reinerman Sur. R.U.
Jack Frazier No. 3 Helberg, J. Reiner man Sur. Spd.
Housh & Thompson No. 1 Helberg et al, H. Reinerman Sur. Spd.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Spd.
Means & McGehee No. 1-E Lackner, H Reinerman Sur. Top sd. 7,694 ft.; T.D. 7,705 ft.

Fairbanks—Harris County

E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. R.U.
Housh & Thompson No. 2 Yerkes, Sam Lewis Sur. Cd. sd. 6,812-35 ft.; run csg.

Friendswood—Harris County

Humble O. & R. Co. No. 18 Gray, Perry & Austin Sur. T.D. 6,043 ft.; top sd. 6,032 ft.
Humble O. & R. Co. No. 1-B Humble-West fee, Luke Hemenway Sur. T.D. 6,044 ft.; top sd. 5,618 ft.
Humble O. & R. Co. No. 2-B Humble-West fee, Luke Hemenway Sur. T.D. 6,045 ft.; top sd. 5,688 ft.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.
Humble O. & R. Co. No. 3-B West, Luke Hemenway Sur. Drlg. sh. 1,200 ft.

Cheek—Jefferson County

Humble O. & R. Co. No. 1 E. K. Failor, C. Hildebrandt Sur. T.D. 7,740 ft.; 5½-in. csg. 7,740 ft.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 1 McFaddin, S. A. Pace Sur. T.D. 6,176 ft.; W.O.C.

Hardin—Liberty County

Atlantic Ref. Co. No. 1 Rives, A. B. Hardin Sur. Loc.
Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.
Woodley Pet. Co. No. 2 Humphrey, F. Hardin Sur. T.D. 7,954 ft.; 5½-in. csg. 7,897 ft.; perf. csg. 7,567-76 ft.; made sqz. job; reperf. csg.; tstg.

Orange—Orange County

C. L. Brown No. 2-B Lutcher Moore Lbr. Co., J. Dyson Sur. Cg. sd. 5,496 ft.
Continental Oil Co. No. 18 Chesson, Wm. Dyson Sur. Loc.
Gulf Oil Corp. No. 2 Laflour, Wm. Dyson Sur. Loc.
Gulf Oil Corp. No. 3 Orange Natl. Bnk., Wm. Dyson Sur. Drlg. sh.&L. 4,496 ft.
Gulf Oil Corp. No. 10-A Winfree, Wm. Dyson Sur. Loc.
Hankamer et al No. 1 Conley, Wm. Dyson Sur. Spd.
Keown Oil Corp. No. 1 Lutcher Moore, Jas. Dyson Sur. Drlg. 4,539 ft.
Union Prod. Co. No. 2 Lutcher Moore, J. Dyson Sur. Drlg. sh. 1,539 ft.

Port Neches—Orange County

Texas Co. No. 13 Kuhn, M. E. Hall Sur. R.U.

Ace—Polk County

Peyton Bros. No. 3-B Kirby West, G. S. Thomas Sur. Drlg. sh. 7,148 ft.

Segno—Polk County

Gulf Oil Corp. No. 3-B Quinn, A. Morales Sur. Drlg. 160 ft.
Gulf Oil Corp. No. 5 Ragan, I.&G.N. Sur. No. 15. Loc.
Gulf Oil Corp. No. 15 Wing, I.&G.N. Sur. No. 13. T.D. 8,074 ft.; run 5½-in. csg.
Providence Oil Co. No. 2 Wing, I.&G.N. Sur. No. 14. Drlg. sh. 7,869 ft.

Spurger—Tyler County

Republic Prod. Co. No. 16 fee, N. Hurd Sur. Cg. sd.&sh. 7,657 ft.

Katy—Waller County

Stanolind O. & G. Co. No. 1 Cohee, Sec. 109, H.&T.C. Sur. Drlg. sh. 2,530 ft.

GULF COAST WILDCATS

Austin County

Crown Cent. Pet. Corp. et al No. 1 Huebner, Renkestolz Sur. R.U.
Kirby Pet. Co. No. 1 Herring, H.&T.C. Sur. No. 102. Top Cockfield 4,463 ft.; T.D. 4,775 ft.; abd.

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Humble O. & R. Co. No. 1 Yates, S. Marsh Sur. 13⅜-in. csg. 2,419 ft.
Texas Co. No. 6 Freeport Sulphur Co., C. Ariola Sur. Loc.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
L. D. Roberts No. 1 C. H. Lang, T.&N. O. Sur. No. 35. Drk.; (cor.).

Colorado County

Coyle & Concord No. 4-B Powell, I.&G. N. Sur. No. 45. Top sd. 6,156 ft.; T.D. 6,158 ft.; 5½-in. csg. 6,004 ft.; W.O.C.
Mills Bennett Prod. Co. No. 1 J. M. Truchard, Ed Curbit Sur. R.U.

Fort Bend County

Geo. Echols No. 1 Smith, Moses Shipman Sur. Loc.
N. W. Hunter No. 1 Lighau, B.B.B.&C. Sur. (north flank Big Creek). Drlg. sh. 4,530 ft.

Galveston County

Sun Oil Co. No. 2 Cade, A. Dickson Sur. Drk.

Harris County

H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico, T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 13-B McFaddin-State, Sec. 8, 10¾-in. csg. 2,758 ft.; T.D. 5,859 ft.; D.S. stk.; backed off at 3,688 ft.; P.B. 4,220 ft.; sdtrkd.; drlg. sh. 5,040 ft.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.
Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. Drlg. sh. 8,013 ft.

Montgomery County

Deep South Pet. Co. No. 1-A Foster Lbr. Co., Pryor Bryan Sur. Loc.

H. A. Pennington et al No. 1 F. L. Banker, L. M. H. Washington Sur. S.D. 1,033 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 3,623 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. T.D. 7,807 ft.; P.B.; sdtrkd.; 7-in. csg. 9,402 ft.; T.D. 9,705 ft.; D.S. stk.; P.B. 8,384 ft.; sdtrkd.; T.D. 9,664 ft.; P.B. 8,900 ft.; drld. to 9,020 ft.; perf. csg. 8,995-9,010 ft.; tstg.

Waller County

Providence Oil Corp. No. 1 Ida Lee Muske, Jas. Perry Sur. 10¾-in. csg. 808 ft.; drlg. sh. 4,373 ft.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, John Lightfoot Sur. R.U.

Wharton County

R. B. Fields No. 1 Barker, John Huff Lge. (Boling dome deep test). Drlg. sh. 3,427 ft.

S. W. TEXAS WILDCATS

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. T.D. 1,722 ft.; perf. csg. 1,650-75 ft.; perf. csg. 1,654-76 ft.; flwd. fresh wtr.; S.S.O.; S.D. prep. to reperf. csg.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. T.D. 2,132 t.; 7-in. csg. 2,008 ft.; S.D.; abd.
Marts & Beaven No. 1 Doherty, John Maxmillian Sur. S.D. 2,965 ft.; abd.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,160 ft.

Bexar County

H. G. Krumm No. 1 Kempf, Samuel McCollough, Jr., Sur. 54. Drlg. 736 ft.
L. G. Priest et al No. 1 E. B. McCollough, Stephen Jett Sur. T.D. 1,004 ft.; bailed to bttm.; recvd. est. 25 gal. oil. I.P. 1½ B.O.P.D.; pmpg.
Charles Schreiner No. 1 McCloskey, L. Desague Sur. No. 134. 7-in. csg. 710 ft.; tstg. at 1,400 ft.
David Stiles No. 1 Minna Sherrer, Jos Antonio de la Garza Sur. S.D. 1,044 ft.
Joe Wagner et al No. 1 Florence Lamm, Manuel De Luna Sur. 3. Drlg. 533 ft.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; drlg. chert and L. 955 ft.
E. L. Nixon No. 2 Crist, John McClenechen Sur. No. 94. S.D. 210 ft.

Brooks County

Humble O. & R. Co. No. 2 McGill Bros., Ygnacios Rivas La Blanca gr. T.D. 4,772 ft.; recvd. P.L.O.; D.S.T. 4,690-4,738 ft.; tstg.; 7-in. csg. 4,690 ft.; I.P. 140 B.P.D.; 11/64-in. ck.
Humble O. & R. Co. No. 3 McGill Bros., Ygnacios Rivas La Blanca gr. Spd.
Southern Minerals Corp. No. 1 Proctor, Fel Furrias Farm & Garden Tracts. O.W.D.D.; T.D. 6,028 ft.; drlg. rk. 6,773 ft.

Caldwell County

S. T. Dudley et al No. 1 Becker, L. L. Joseph Sur. T.D. 713 ft., chk.; 7-in. csg. 685 ft.; T.D. 1,117 ft.; Edw. L.; P.B. to test Austin chalk.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. T.D. 10,015 ft.; P.B. 8,550 ft.; perf. csg. 7,811-46 ft.; flwd. oil and S.W.; abd.

Comal County

O. W. Killam No. 1 Gruene, Henry Foster Sur. R.U.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

Ark. Fuel Oil Co. and Taylor Ref. Co. No. 1 Hernandez, F. Hernandez Sur. No. 56. Drlg. sh. 4,880 ft.
J. W. Cosner et al No. 1 Cantu, Geraro Briones Sur. Loc.
Goldrus Drlg. Co. et al No. 1 Society for the Propagation of Faith, Pedro de la Zerda Sur., Sec. 7. Drlg. 739 ft.
Gravis and Doran No. 1 Parr, San Andres gr., 1 mi. N of Sweden field. Drlg. sh. 4,039 ft.
Frank Gravis No. 3 Schallert, Seale, Morris & Seale Sur. No. 2550. T.D. 3,168 ft.; P.B. 1,800 ft.
Interstate Minerals, Inc., No. 1 Brooker, B.S.&F. Sur. No. 85. Loc.
Porter and Blanchard No. 1 Yates, John Gray Sur. Loc.
S.K.&C. et al No. 3 Welder, Nathaniel Tinsley Sur. Cg. sdy. sh. 3,018 ft.
Transwestern Oil Co. No. 16 Duval Co. Rnh. Co., Pilar Martinez Sur. Loc.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Frio County

Hickock & Reynolds No. 1 San Antonio Joint Stock Ld. Bnk. Drlg. L. 3,350 ft.

Goliad County

Steinberge Pet. Corp. No. 1 Albrecht, T. Hancock Sur. T.D. 5,313 ft.; 5½-in. csg. 5,313 ft.; perf. csg. 5,238-44 ft.; pulling tbg.; cmt. job gave way; drlg. out cmt.; will perf. csg. 4,804-07 ft., 4,811-13 ft., and 4,829-32 ft.

Gonzales County

Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 1,170 ft.
A. L. Mitchell and L. W. Sorrell No. 1 A. I. Culpepper. Drlg. 2,875 ft.

Guadalupe County

Frank Glenn No. 1 Appling, Harriet Cottle Sur. No. 14. T.D. 2,218 ft.; tstg. 2,130-37 ft.; 7-in. csg. 1,960 ft.; R.U. to pmp.
John Hueners et al No. 1 Bauer, R. E. Brown Sur. T.D. 1,462 ft.; tstg. O.S. 1,430-62 ft.
Joseph Holefield No. 1 Claud Brodnax, John King Sur. T.D. 2,231 ft.; swbd. dry.
E. A. Weyel No. 1 Schraffel, R. B. White Sur. Drlg. sh. 228 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. T.D. 1,483 ft. (cor.); 4½-in. csg. 1,468 ft.; S.D.

Hidalgo County

Pan American Prod. Co. No. 1 J. De la Vina, Vicente Hinojosa gr. Drlg. sh. 6,650 ft.

Jim Hogg County

Humble O. & R. Co. No. 5 Bass, San Raphael gr. T.D. 4,771 ft.; 7-in. csg. 4,771 ft.; abd.
Humble O. & R. Co. No. 6 Kelsey Bass, San Rafel gr. R.U.
Humble O. & R. Co. No. 1 Mestens O. & G. Co., Fowler & Rankin subd., Pallos Blancos gr., R. G. Sars Sur. R.U.
Johnson & Robinson No. 1 Palacios, Mary Montgomery Sur. Drlg. sh. 1, 610 ft.

Jim Wells County

Ark. Fuel Oil Co. No. 1 Blinka, M. Marerra gr. T.D. 5,803 ft.; abd.
H. H. Howell et al No. 1 W. T. Wright, Ross M. Bridges Sur. Drlg. 3,226 ft.
H. H. Howell et al No. 2 Wright, A.&M G.R.R. Sur. Drlg. 1,036 ft.
Magnolia Pet. Co. No. 1 Samuel Maun, Los Olmos y Loma Blanca gr. 7-in. csg. 6,314 ft.; drlg. sh. 6,435 ft.
W. H. Mathews No. 1 Frances Clark, Los Precenos gr. 10¾-in. csg. 617 ft. drlg. sh. 3,624 ft.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,332 ft.; 7-in. csg. 7,332 ft.; perf. csg. 7,327-30 ft.; drlg. sd. 7,555 ft.; P.B. 7,565 ft.; perf. csg. 7,550-60 ft.; tstg.

Karnes County

Formax Oil Co. No. 1 Pflugger, Erasmus Seguin Sur. S.D. 1,969 ft.
Suttle et al No. 1 McKinney, Luz Navarette Sur. T.D. 4,255 ft.; abd.

Kendall County

Carpenter No. 1 Seidensticker, A. Rodriquez Sur. No. 257. Drlg. 650 ft.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. S.D. 985 ft.

Kinney County

Bob Rose No. 2 Gaebler, Dolores Soto de Beales gr. S.D. 300 ft.

Kleberg County

Pure Oil Co. No. 1 State, Tr. No. 155, R.U.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). S.D. 250 ft.; abd.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,404 ft.; acd.; R.U. to pmp.

Live Oak County

R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.
L. W. Stieren No. 3 Lange, Thos. Adams Sur. Drlg. sh. 300 ft.

McMullen County

Cities Service and Continental Oil Co. No. 1 Lowe, Henry Blood Sur. R.U.
Holbrook and O'Farrell No. 1 Miles, J. Poitevent Sur. Loc.
R. P. Holland et al No. 1 Gayle, B.S.& F. Sur. Drlg. sdy. sh. 1,236 ft.; no report.
R. M. Strum and Womack No. 1 Smith and Leischner, A. Zumwalt Sur. S.D. 30 ft.

Medina County

Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. S.D. 875 ft.; prep. to run csg.

Milam County

McGuyer and McCormick No. 1 Jacob Jose Leal Sur. T.D. 1,056 ft.

Nueces County

Heep Oil Corp. et al No. 1 G. W. Smith, Jose Vicente Lopez de Herrera gr 10¾-in. csg. 1,090 ft.; drlg. plug.
O. W. Killam No. 1 H. F. Hoegmeyer, E. L. Rincon de Corpus Christi gr. 10¾-in. csg. 1,076 ft.; drlg. sh. 5,678 ft.
Renwar Oil Co. et al No. 1 Eschberger Nueces River Irrig. Park subd. T.D. 7,510 ft.; abd.
Republic Nat. Gas Co. No. 1 Robertson, Vincent Lopez de Herrera gr. Drk.
Seaboard Oil Co. No. 2 Wilson, Jose Vincente Lopez de Herrera Sur., Blk. 9. 13⅜-in. csg. 1,551 ft.; T.D. 5,035 ft.; rmg.; 10-min. D.S.T. 4,985-96 ft.; rec. 410 lbs. press.; 150 ft.; 33-grav. oil.
Union Prod. Co. No. 1 Minnie Brown (Agua Dulce area). T.D. 10,723 ft.; P. B. 6,885 ft.; perf. csg. 6,850 ft.; tstg. tstd. S.W.; P.B. 5,800 ft.; to test.

Real County

Blakely Smith et al No. 1 Love Ranch, H.E.&W.T.R.R. Co. Sur. S.D. 310 ft.

Refugio County

Phillips Pet. Co. et al No. 1 Emilie Paveleck, Aldrete 6¼ Lge. T.D. 6,525 ft.; cmtd. csg. to test 6,312-31 ft.

San Patricio County

Nueces Royalty Co. No. 1 Harries, J. Smith Sur. R.U.

Starr County

Coronado Corp. No. 7 Rooke, Aldrete 6¼ Lge. R.U.
Coronado Corp. No. 8 Rooke, Aldrete 6¼ Lge. R.U.
Rhinehart and Bowman No. 1 Bowman, J. C. McCarty Sur. M.I.M.
Sun Oil Co. No. 4 McKinney, A. J. Smith Sur. No. 240. Drlg. sh. 4,356 ft.
Sun Oil Co. No. 1-B Montalvo, Los Retachez gr. Spd.

Victoria County

H. L. Edwards No. 1 Strobe, J. M. Cobarrubias Sur. T.D. 5,165 ft.; cmtd. open hole with cmt.; W.O.C.

Webb County

Rodney DeLang No. 1 Jesus Vela Cuellar, Jr., Sur. 134. Drlg. sh. 1,350 ft.
Magnolia Pet. Co. No. 1 Duval Co. Rnh. Co. T.D. 2,535 ft.; abd.
Richardson Pet. Co. No. 1 A. M. Bruni, H.&G.N.R.R. Sur. No. 17. Drlg. sh. 1,566 ft.; no report.

Williamson County

L. B. Burnette, Jr., Tr., No. 1 D. C. Reed, E. Leichtle Sur. S.D. 1,045 ft.

Zapata County

C. H. Lewis et al No. 1 Flores, Charco De La India gr. Drlg. sh. 355 ft.

EAST TEXAS

(Border Counties)

Hardin County

F. H. Barnwell No. 1 Smith, A. P. Hope Sur. Cg. 2,830 ft.; D.S.T. 2,280 ft. tstg. dry; ran 5-in. csg. 2,300 ft.
W. S. King No. 1 Taylor, Martin Sur. S.D. 3,180 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 2 Belcher, A. D. S. Coy Sur. R.U.
Ark.-La. Gas Co. No. 1 E. Crawford, A. D. S. Coy Sur. Set 5½-in. csg. 6,097 ft.; perf. 6,070-95 ft.; tstg.
Gulf Prod. Co. No. 2 Blake, J. N. Jackson Sur. D.S. stk. 2,690 ft.; fsg.; T.D. 5,948 ft.
G. Scott Hammond No. 1 W. S. Ford, C. Grayson Sur. 9⅝-in. csg. 1,262 ft.; csg. seat would not hold; T.D. 6,189 ft.; set 5½-in. csg. 6,007 ft.; tstd. est. 250,000 cu. ft. gas; open flow; acdzd. with 1,500 gal. and tstd. est. 7,000,000 cu. ft. gas; tstg.; T.D. 6,099 ft.
Hollandsworth Drlg. Co. No. 2 Hurst, SW cor. lse., J. Hanks Sur. Set 5-in. csg. 6,053 ft.; T.D. 6,073 ft.; W.O.C.
Shell Pet. Corp. No. 1 Stephenson, G. Perry Sur. 8⅝-in. csg. 1,013 ft.; 5-in. csg. 5,991 ft.; perf. 5,973-80 ft.; flwd. 2 B.P.H.; set flow valves; comp.; 173 bbls. in 18 hrs. with 500 lbs. input gas; well making 40% wash wtr.; T.D. 5,996 ft.
Shell Pet. Corp. No. 2 Whelan, Thos. Gillespie Sur. 5½-in. csg.; T.D. 5,992 ft.; csg. split 3,790 ft.; sqzd. off; W.O.C.
Texas Co. No. 3 Braden, J. N. Fitzgerald Sur. Set 7-in. csg. 6,023 ft.; perf 5,991-6,008 ft.; acdzd. with 3,000 gal.; comp.; 23 B.P.H.; ¼-in. ck.; T.&C.P. 300 lbs.
Texas Co. No. 3 Chatten, Wm. Meyers Sur. Set 9⅝-in. csg. 2,106 ft.; drlg. sh. &L. 5,240 ft.

Marion County—Other

Tom Bell No. 1 Moseley, D. Lane Sur. Swbd. some oil; plg. tbg. 2,200 ft.
Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. T.D. 2,394 ft.; swbd. dry; shot with 2 qts. nitro at 2,334 ft.; tstd. dry; S.D. 2,394 ft.
S. L. Fulton et al No. 1 Burks, G. Coor Sur. Spdg.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. S.D. 5,885 ft.; flows ½ to 3 bbls. 41-grav. oil and goes dead; C.P. 500 lbs.; will attempt to comp. as gas well.

San Augustine County

Superior Oil Co. et al No. 1 Long Bell Lbr. Co., S.P.R.R. Sur. 10¾-in. csg. 440 ft.; T.D. 5,102 ft.; S.D.

WEST TEXAS WILDCATS

Andrews County

Atlantic and Standard No. 1-B Cowden, Sec. 1, Blk. 14. T.&P. Sur. U.R. 300 ft.; stk. D.P. 3,480 ft.
Honolulu Oil Corp. No. 1-18 J. E. Parker, Sec. 18, Blk. A-44, P.S.L. Sur. Drlg. 4,625 ft.
Richmond Drlg. Co. No. 1 Bryant-Link, Sec. 7, Blk. 48, P.S.L. Sur. Drlg. 2,900 ft.
Rogers & Rogers No. 1-B University, Sec. 20, Blk. 9, Univ. Sur. S.D.O. 4,431 ft.; no shows.
J. W. Trippiehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. Tstg. 5 to 10 B.O.P.D.; 4,468 ft.; pulling tbg. 4,476 ft.

Cochran County

T. G. Shaw No. 1 Carrie S. Dean, Lge. 94. Drlg. 4,666 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 39, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Great Western Prod. No. 1-B Univ., Sec. 5, Blk. 30, Univ. Sur. Drlg. 90 ft.
Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. C.&P.
Magnolia Pet. Co. No. 12 W. P. Edwards, Sec. 12, Blk. 23-B, P.S.L. Sur. Drlg. 1,950 ft.
Magnolia Pet. Co. No. 1-18 University, Sec. 18, Blk. 30, Univ. Sur. W.O.C. 805 ft.
Standard O. of Texas No. 1-4 University, Sec. 4, Blk. 30, Univ. Sur. Drlg. 2,600 ft.

Crockett County

Hanson & Anderson No. 1 W. T. Knoelke, Sec. 30, Blk. GG, H.E.&W.T. Sur. M.I.M.
Humble No. 1 Ozona-Barnhart, Sec. 4, Blk. M-N, G.S.&F. Sur. W.O.C. 16-in. 501 ft.

Culberson County

Harry Niehaus No. 1 Caldwell, Blk. 109, Sec. 13, P.S.L. Sur. Drlg. 3,212 ft.
Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex. Oil No. 1 J. E. Neely, Sec. 28, Blk. 35, T.&P. Sur. Drlg. 3,625 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. W.O. csg. 3,508 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur.; 6,000-ft. test. Stk. D.P. 4,375 ft.

Ector County

M.B.K. Drlg. Co. No. 1 J. M. Gist, Sec. 9, Blk. 42, T.&P. Sur. Drlg. 4,200 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,571 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Flwd. 148 B.O. in 9 hrs.; P.B. depth of 7,400 ft.; P.B. 6,821 ft.; tstd. S.W.; P.B. 6,134 ft.; tstg.

Hockley County

S. W. Richardson No. 1 A. E. Coe, Lbr. 53, Lge. 40, Maverick C.S.L. Sur. R. U.R.

Howard County

T. G. Shaw No. 1-B Wilkerson, Sec. 19. Blk. 34, T.&P. Sur. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. Drlg. 5,596 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Irion County

Clyde Crabb No. 1 W. M. Boelke, Tom Green C.S.L. Sur. Sp. and S.D.

Jeff Davis Parish

H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. Drlg. 620 ft. last report.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Martin County

T. G. Shaw No. 1 Wilkerson, Sec. 35-A, B.&C. Sur. Pulling on stk. D.P. at 3,605 ft.

Mitchell County

Ajax Drlg. Co. No. 1 Schustes, Sec. 25, Blk. 17, S.P.R.R. Sur. D.&A. 3,508 ft.

Pecos County

G. T. Abell et al No. 1 Baldwin Est., Sec. 24, Blk. 9, H.&G.N. Sur. S.D.O. 2,400 ft.
J. R. Bell No. 1-C Gulf-Shearer, Sec. 11. Blk. 10, H.&G.N. Sur. S.D.O. 1,992 ft.
Childress Royalty No. 1 Humble-Shearer, Sec. 103, Blk. 10, H.&G.N. Sur. Drlg. 1,280 ft.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.C. Sur.; 2,500-ft. test. U.R. 7-in. 200 ft.; T.D. 2,053 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Drlg. 800 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. U.R. 950 ft.; T.D. 1,620 ft.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Dynamited hole; D.P. stk. when whpstk. was drld. out at 6,881 ft.
J. C. Trees No. 1 fee, Sec. 63, Blk. 8, H.&G.N. Sur. M.I.R.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31, Blk. 58, P.S.L. Sur. S.D.R. 365 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 1,775 ft.

Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. Blowing gas at 5,525 ft.

Scurry County

Coffield & Guthrie No. 1 First Natl. Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. R.U.R.

Forest Dev. Co. No. 1 J. J. Koonsman, Sec. 217, Blk. 2, H.&T.C. Sur. Drlg. 4,045 ft.

Tom Green County

Southern Cross No. 1 Upton & Upton, Sec. 20, Blk. A, A.B.&M. Sur. Loc.

Spinner No. 1 Reed, Mason Ferry Ranch Sur. W.O.C.; cave 4,948 ft.

Tom Green Oil Co. No. 1 Schreiber, A. Krending Sur. No. 1663. R.U. spdr.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. S.D.R. 715 ft.

Ward County

Edwards & Donnelly No. 1 J. S. Reynolds, Sec. 34, Blk. 1, H.&T.C. Sur. Tstg. 1,835 ft.; comp.; 787 B.O.P.D.

Robt. E. Mitchell No. 1 Allen, Sec. 7, Blk. 32, H.&T.C. Sur. P.B. 2,529 ft.; prep. to test.

Yoakum County

Honolulu Oil No. 10-695 R. Bennett, Sec 695. Drlg. 240 ft.

Shell Pet. Corp. No. 1 C. A. Hudson, Sec. 834. Bldg. drk.

Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743. P.B. 5,240 ft.; flwd. est. 40 B.O P.D.

TEXAS PANHANDLE

Collingsworth County

C. H. Mee and C. F. Anderson No. 1 V. K. McCaskill, Sec. 18, Blk. 16, H.&G. N. Sur. S.D. 490 ft.

White No. 1 Wischamper. Fsg. 2,310 ft.

Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 4,155 ft.

Gray County

English No. 1 Eudy. S.D. 3,977 ft.

Products O. & G. Co. No. 1 Mason Davis, Sec. 23, Blk. 23-M, H.&G.N. Sur. Loc.

Tripplehorn No. 2 Webb, Sec. 12, Blk. A-9, H.&G.N. Sur. Drlg. 2,014 ft.

Lipscomb County

Darrouzett Oil Co. No. 1 Pugh, 1½ mi. S and 1 mi. W of Darrouzett. Drlg. 2,068 ft.

M. C. Tieman No. 1 Spandle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 1,880 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.&F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. S.D.R. 6,161 ft.

Roberts County

Whitlock No. 1 Cunningham. Drlg. 3,400 ft.

E. C. TEXAS WILDCATS

Angelina County

K. L. McHenry No. 1 Humble-fee, T.E. R.R. Sur., ½ mi. SE of Zavalla. D.&A. 2,614 ft.

Cherokee County

C. C. Lanier No. 1 A. T. O'Neal, J. M. Procella Sur., 3 mi. E of Troup. S.D. 50 ft.

Falls County

R. L. Seastrunk No. 1 J. B. Trewitt, J. A. Manchaca Sur., 4 mi. E of Chilton. S.D. 100 ft.

Grayson County

Denver P. & R. Co. No. 3 Cannon, E. Barnes Sur. No. 43, 1 mi. NW of Whitesboro. R.U.

F. H. E. Oil No. 1 Graham, Chas. Quillen Sur., 1 mi. S of Collinsville. Drlg. 400 ft.

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. S.D.O. 3,929 ft.

Henderson County

Tide Water-Seaboard-Humble No. 1 Sadie Starr McGee, R. Acosta Sur., 3½ mi. NE of Murchinson. Tstg. 8,090 ft. prep. comp. as gas-distillate well.

Houston County

Cook & Mayo No. 1 C. A. Walling, B. Parker Sur., 4 mi. N of Grapeland. W.O.C. 202 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drlg.

Lamar County

Bahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ¼ mi. N of Paris. S.D 30 ft.

Limestone County

H. Gant No. 1 Vol De Long, P. Varela Sur., 1½ mi. NW of Thelma. Loc.

McLennan County

C. E. Porter No. 1 B. D. Burchett, De la Vega Sur., just SE Waco. S.D. 695 ft.

Navarro County

Guy Sitton No. 1 J. P. Fortson, T. J. Chambers Sur., 4 mi. E of Alma. S.D. 628 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 30 ft.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co., G. S. Parks Sur., 17 mi. N of Clarksville. S.D. 71 ft.

Rusk County

Ham & Baggs No. 1 A. Griffin, J. Randolph Sur., 4½ mi. NW of Mt. Enterprise. Loc.

Smith County

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. S.D. 1,802 ft.; S.L.M.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. Gas blowout 148 ft.; S.D. 2,627 ft.

Upshur County

R. E. L. Johnson No. 1 Lizzie Parker, John B. Gay Sur. S.D. 2,817 ft.

Van Zandt County

F. A. Richardson No. 1-A B. C. Dodd, T. W. Hutchinson Sur., 2 mi. S of Grand Saline. Drlg. 300 ft.

NORTH TEXAS WILDCATS

Archer County

Birdwell Oil Co. No. 31-B Oil Inv. Co., Lot 2, John Richards Sur., 5 mi. NW of Archer City; 4,200-ft. test. Drlg. 1,405 ft.

W. B. Omohundro No. 1 T. B. Wilson, Sec. 5, H.&T.C. Sur. Drlg. 2,310 ft.

Phillips Pet. Co. No. 1 J. B. Miller, Sec. 20, A.T.N.C.L. Sur. T.D. 4,006 ft.; O. W.D.D.; C.O. to D.D. to 4,500 ft.

L. Sikes No. 1 Walter Ford, T. M. Cecil Sur. A-982. T.D. 4,204 ft.; O.W.D.D. to 5,500 ft.; T.D. 4,437 ft.; B.S.S.O. 4,379-4,400 ft.; cmt. 5⅛-in. liner on bottom bailing mud; swabbing through tubing; 4,500 ft. oil in hole.

Westmount Oil Co. No. 7 T. J. Dempsey, Sec. 10, D.C.S.L. Sur., O.W.D.D. Perf. csg. 4,139-44 ft.; blg. wtr. and tstg.

Baylor County

British American Oil Prod. Co. No. 1 F. C. Green, T.&N.O. Sur., Sec. 215. Blg. est. 20 B.O.P.D. from 2,550-2,600 ft.; 6⅝-in. 2,579 ft.; sat. L. 2,579-2,635 ft.; P.B. 2,635 ft.; est. 550 bbls. on pump; W.O.T.

Clay County

L. T. Burns No. 1 Browning, Sec. 94, Belcher Sub.; 5,000-ft. test. Bldg. drk.

Cooke County

H. W. Caudle No. 1 E. E. Walker, H. Gilman Sur.; 5,500-ft. test. Drlg. 1,575 ft.

Sinclair Prairie No. 3 J. M. Best, T. Toby Sur. A-1054. Drlg. 3,900 ft.

Whitfield et al No. 1 B. Voth, Z. D. Fulton A-1250 Sur. 6⅝-in. 1,595 ft.; 5⅛-in. 1,793 ft.; sat. L. 1,783-93 ft.; est. 500 bbls.; 10 hrs.; S.D. for test.

Foard County

Fleetwood & Kaufman No. 1 Prowers, H.&T.C. Sur., Blk. A. S.D.O. 5,005 ft.

Grayson County

Denver P. & R. Co. No. 3 Cannon, E. Barnes Sur. No. A-43. Spudding.

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Fsg. 562 ft.

J. H. McMurray No. 1 T. J. Long, Jas. Garland Sur. A-441. S.D.O. 3,929 ft.; ran Schlumberger; S.S.O. 2,595-2,601 ft.

C. E. Marshall No. 1 F. Christman, M. Ahalt Sur. A-147. S.S.O. 830-38 ft.; tstg.

Jack County

Noah Daves No. 1 K. D. Baker, Sec. 2709, T.E.L. Sur.; 4,000-ft. test. Recmt. 10-in. at 90 ft.; S.D.O. 2,320 ft.

Pitzer & West No. 1 F. Warren, Sec. 2784, T.E.&L. Sur. Drlg. 1,060 ft.

Montague County

Benton & Holmes No. 1 J. Bowers, Sec. 55, M.E.P.&P. Sur. S.S.O. 2,887-95 ft.; 6⅝-in. 2,883 ft.; tstg. est. 500 to 600 bbls. per day.

Lobban et al No. 1 Henry Payne, Wm. Donoho Sur. A-178. Drlg. 1,700 ft.

Wichita County

L. T. Burns No. 1 Browning, Sec. 94, Belcher Supr.; 5,000-ft test. Loc.

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D

H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Plts.

Wilbarger County

Lawson & Leavell No. 16 W. T. Waggoner A. Sec. 109, H.&T.C. Sur., Blk. 14. Matl. 3,500-ft. test.

Humble O. & R. Co. No. 1 T. J. Milner, Sec. 31, H.&T.C. Sur., Blk. 9; 3,000-ft. rotary test. Drlg. 1,010 ft.

Young County

Brader & Groves No. 1 J. L. Clark, Sec. 2, E.L.&R.R. Sur. 6⅝-in. 3,850 ft.; O.S. 3,850-60 ft.; est. 200 bbls.; tstg.

H. M. Leidecker No. 1 J. M. Nail, Sec. 1997, T.E.&L. Sur. Drlg. 817 ft.

Long & Lupton No. 1 A. Crouch, I.&G. N. Sur. A-1460. 6⅝-in. 3,865 ft.; sat. L. 3,940-44 ft.; treating with acid; tstg.

Magnus & McLester No. 1 B. B. Teague, E. S. Colthrop Sur. A-1390. Drlg. 3,500 ft.

Pitzer-West No. 1 Robt. Bulloch, J. P. Hume Sur., Abst. 140. 5⅛-in. 4,169 ft.; O.S. 4,338-39 ft.; flwd. 150 bbls., 1 hr.; W.O.T.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Sp.&S.D.

Callahan County

Dobbs Oil Co. No. 1 Finley, Sec. 75, Bayland Orphans Home Ld. Fsg. tools 1,785 ft.

J. C. Jackson and Doug. Tomlingson, Jr., No. 1 T. J. Thompson, Sec. 30, B.B.B. &C. Sur. U.R. 1,825 ft.

Roeser & Pendleton No. 1 Chas. Yost, Sec. 18, Blk. 8, S.P. Sur. Drlg. 3,405 ft.

Coleman County

Arcadia Ref. Co. No. 1 W. R. Roberts. D. J. Holt Sur. Rng. csg.; S.O. 3,102 ft.

E. E. Kirkpatrick No. 1 F. Nixon, Burnett C.S.L. Sur. Drlg. 2,665 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. S.D. drill-stem test 2,630 ft.

O. L. Johnson No. 1 Mrs. W. Jones, Sec. 34, H.&T.C. Sur., Abst. 1610. Swbg. 7 B.O.P.D. 2,835 ft.

Loraine No. 1 Carlisle, Sec. 9, Blk. 2, H.&T.C. Sur. Drlg. 2,606 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D. 1,738 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 2,980 ft.

Collard No. 1 W. L. Payton, H. Pierson Sur. No. 1, Abst. 1105. S.D. 185 ft.

Fisher County

General Crude No. 1 M. M. Flores, Sec 212, Blk. 1, B.B.B.&C. Sur. Prep. cg. 3,167 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. Fsg. bailer 2,200 ft.

Haskell County

Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. Moving in spudder to re-test at 5,210 ft.

Hood County

Prince & Miller No. 1 J. H. Andrews, NW cor. of Geo. Sutherland Sur. S.D. 524 ft.

Jones County

Brown Eagle No. 1 Waterson, Andrews Sur. No. 191. T.D. 2,283 ft.; S.D.

Grover, Rose & Farrell No. 1 O. D. Swanson, Sec. 193, B.B.B.&C. Sur., 2 mi. NE of Avoca. U.R. 1,807 ft.; T.D. 2,880 ft.

Hedrick Oil Co. No. 1 S. T. Morrison, Sec. 137, Martinez Sur. Comp. 164 B.O.P.D. 2,150 ft.

J. H. Sproules No. 1 James Nichols, Sec. 47, Blk. 16, T.&P. Sur. Prep. test 1,780 ft.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. S.D.O. 2,827 ft.

Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW Sweetwater. Drlg. 4,110 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,200 ft.

Glen Rose No. 1 H. D. Groves, SW¼ Sec. 350, T.&P. Sur. Temp. abd. 685 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. S.D. 3,894 ft.

Fox & Rudd No. 1 Shotwell, Sec. 59, B.A.L. Sur. Fsg. 1,632 ft.

R. H. Gordon and Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,660 ft.; S.D. 4,293 ft.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Brown County

C. Norman No. 1 Carter, dry and abandoned at 985 feet.

Callahan County

Alliance Oil Co. No. 1 Cook, dry and abandoned at 232 feet. Warren & Kleiner No. 2 Williams, dry and abandoned at 743 feet; No. 3 Williams, dry and abandoned at 810 feet.

Coleman County

Lynn No. 1 Eades, abandoned at 415 feet. Thate No. 1 Wright, dry and abandoned at 325 feet.

Eastland County

Henderson No. 1 Strickland, dry and abandoned at 1,161 feet.

Jones County

Danciger Oil & Refining Co. No. 4 Roberts, 1,905-27 feet, 319 bbls.

Palo Pinto County

A. Atkisson No. 7 Costello, 2,335-55 feet, 44 bbls.

Shackelford County

Fox & Sons No. 1 Nail Estate, 1,382-1,414 feet, 20 bbls. Myers No. 1 Matthews, dry and abandoned at 528 feet. West & Honea No. 2 Hill Estate, dry and abandoned at 942 feet.

Miocene Stratigraphy of California

A new book on the geology of California entitled "Miocene Stratigraphy of California," by Robert M. Kleinpell, member of the American Association of Petroleum Geologists, has just been published. This work establishes a standard chronologic-biostratigraphic section for the Miocene of California and compares it with the typical stratigraphic sequence of the Tertiary of Europe.

The book contains 357 pages and is divided into three principal sections: The Relix Canyon Section; Correlation and Age; and Formational Correlations Within the California Province. A systematic catalog is included, placing in their proper relationships the various Foraminifera recorded from the California Miocene. Special plates carry the illustrations.

"Miocene Stratigraphy of California" may be purchased through the Book Department of The Oil and Gas Journal at the regular established price of $5, express prepaid (postage extra outside the United States), and a copy will be forwarded promptly upon receipt of check or money order for that sum. Where company purchase order or check does not accompany the order, the book will be sent express c.o.d. to avoid delay.

Pipe Corrosion, Coatings

A new book entitled "Pipe Corrosion and Coatings," by Erick Larson, is a practical treatise on this subject for practical men. The author has collected, coordinated and explained in simple terms the various theories of corrosion and of pipe protection. The object of the book has been to explain theory in such a way that the average operator could understand it and to show in plain language how theory should be applied in a practical way. Outlines of specific procedure for determining the corrosiveness of soils, for making corrosion surveys of pipe lines and for applying protective coatings are included. The book is divided into 28 chapters, contains 455 pages and is well illustrated.

"Pipe Corrosion and Coatings," may be purchased through the Book Department of The Oil and Gas Journal at the regular established price of $2.50 express prepaid (postage extra outside the United States), and a copy will be forwarded promptly upon receipt of check or money order for that sum. Where company purchase order or check does not accompany order, the book will be sent express c.o.d. to avoid delay.

Personal Paragraphs

JULE WALKER, field geologist for the Sunray Oil Co., has been stationed at Konowa, Okla., to watch developments in the new Grayson pool.

A. C. STULTS, district engineer for the Texas Railroad Commission in Abilene, Tex., will leave that position February 1 to become engineer for Thomas Y. Pickett & Co., consulting engineers of Dallas, Tex.

L. M. BALTZELL, of the Wolverine-Empire Refining Co. laboratory staff in Oil City, Pa., has been appointed a member of the Technical Advisory Committee of the Pennsylvania Grade Crude Oil Association.

E. T. SINGER, treasurer of the Standard-Vacuum Oil Co., New York, has been elected a director.

W. F. CATLETT, associated with the Catlett group of oil companies in Tulsa, has gone to Los Angeles, Calif., where he will stay about two months.

W. S. FARISH, president, and WALTER C. TEAGLE, chairman, Standard Oil Co. of New Jersey, are on their annual hunting trip in eastern Georgia.

WALTER W. HEATHMAN, of the Union Oil Co.'s geological department in Los Angeles, Calif., broke his left wrist and will carry around a plaster cast for several weeks.

A. A. BUCHANAN, independent oil operator of San Antonio, Tex., recently made a flight to New York in which he made an average speed of 240 miles an hour. The mileage was 1,495, as it was necessary to fly around a storm. Mr. Buchanan took his daughter, Miss Hortense Buchanan, to New York, where she will resume dramatic studies.

ALF M. LANDON, independent oil operator and former governor of Kansas, spoke before a dinner of the Kansas Press Association in Topeka last Saturday night. In his address, the first he has given since his recent return from Lima, Peru, where he was a delegate to the eighth international conference of American states, Mr. Landon said democratic and totalitarian governments are at grips in an economic war, and any nation head over heels in debt is in a bad position to defend itself.

J. W. COLLINS, scout for the Phillips Petroleum Co. in Amarillo, Tex., has been transferred to the company's St. Joseph, Mo., office. W. B. SMITH has been moved from Bartlesville, Okla., to Amarillo to take over Mr. Collins' duties.

LYNDELL H. DEATHERAGE, sales manager of the Bell Oil & Gas Co., Tulsa, is suffering from a throat affection which prompted his physician to order three weeks' absolute rest for the vocal cords. Lyn was allowed to whisper for a while, but when the desired improvement failed to appear the doctor clamped down on even that mode of communication. Complete recovery is promised, "but," penciled the silent sales manager, with a wry smile, "I'm getting all-fired weary of shaking my head."

L. B. SIMMONS, president of the Rock Island Refining Co., Duncan, Okla., and DR. H. B. ALSPAUGH and L. E. KINCANNON, vice presidents, have obtained a charter for the Rocket Oil Co., of Duncan, capitalized at $300,000. The new company will take over properties now being purchased from the Carter Oil Co. in southern Oklahoma.

CHARLES F. STEVENSON, formerly general manager of operations in Pennsylvania and New York for South Penn Oil Co., has been made vice president. FRANK SCHELL, superintendent of drilling operations in the Bradford field, succeeds him. J. L. O'NEIL, superintendent of the Oil City, Pa., district, succeeds Mr. Schell. CLARENCE GRAHAM, assistant superintendent of tools in the Bradford field, succeeds Mr. O'Neil.

RALPH J. SCHILTHIUS, Houston, Tex., engineer in the management and statistical research department of the Humble Oil & Refining Co., has been selected for the Alfred Noble prize of $500 in cash and other awards for his paper on "Connate Water in Oil and Gas Sands," presented at the American Institute of Mining and Metallurgical Engineers' fall meeting of the petroleum division in Oklahoma City in October, 1937. The prize is given for a technical paper prepared by an author not over 30 years of age. Mr. Schilthius is a graduate of the Colorado School of Mines.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

A 7,000-bbl. well in the Vinton pool in Louisiana and the prospects of opening a pool at Pierce Junction, Tex., are highlights of the week in the Gulf Coast.

Standard Oil Co. of New Jersey stock, par $100, is quoted $416 bid and $419 asked in eastern financial marts.

South Penn Oil Co. directors elected this week are Joseph Seep, E. E. Crawford, J. L. McKinney, J. C. McKinney, A. F. Corwin, H. W. Cummins and S. H. Hartman. Mr. Seep is president.

Oklahoma and Kansas crude oil sells at $1.03 per barrel.

20 YEARS AGO

The production of all the fields in the world in 1918 is estimated by Dr. F. Perkins, British oil authority, at 60,000,000 tons. That is about 420,000,000 bbls.

The Homer pool in Claiborne Parish, North Louisiana, is opened by the Consolidated-Progressive Oil Co.

A Texas Co. well in the West Columbia, Texas, field flows at the rate of 16,000 bbls. per day.

A nitroglycerine explosion causes five deaths and a lot of house wreckage in Big Heart (later Barnsdall), Okla.

10 YEARS AGO

The 322,338 wells in the United States produced an average of 7.61 bbls. per day in 1928.

N. C. McGowen of Shreveport, La., has been elected president of the Mississippi Valley Fuel Corp., organized to establish a gas pipe line from the Monroe, Louisiana, fields to St. Louis, Mo.

Over 5,500 miles of oil pipe lines, main lines and laterals, have been built to serve the West Texas fields, at an estimated cost of $150,000,000.

EUGENE HOLMAN, president of several foreign subsidiaries of Standard Oil Co. of New Jersey, sailed for Europe from New York January 18.

R. W. McDOWELL, vice president of the Mid-Continent Petroleum Corp., in charge of sales, was elected president of the Tulsa Club by the board of governors last week.

JOHN W. SCOTT, for several years superintendent of the General Petroleum Corp.'s Vernon, Calif., refinery and now a member of the company's gas department, recently completed 25 years, uninterrupted service with the company.

ED SMITH and family, residing near St. Elmo, Ill., now have a fleet of seven automobiles, thanks to the discovery of oil on their farm. Mr. Smith bought a car for each of six children and a seventh for Mrs. Smith and himself. The only one without a car is a minor son, who was given a bank account providing enough to buy one when he is 18. The farmer recently sold a lease on his 100-acre property for $50,000 and royalty on the oil it produces.

W. D. RICHARDSON has resigned as vice president and director of the Cosden Petroleum Corp., Fort Worth, Tex., to devote his entire time to personal business. Mr. Richardson went to Texas in the pioneer oil days at Corsicana, where he operated the Richardson Lubricating Co. He later owned the Sapulpa Refining Co. at Sapulpa, Okla., and later a refinery in Eldorado, Kans. Returning to Texas, he constructed the Richardson Refining Co. plant at Big Spring. Cosden constructed a plant nearby and later the two were consolidated.

W. N. REES, district foreman for the Atlantic Refining Co. in the East Texas field, will address the East Texas chapter of the A.P.I. February 7 on "Gas Lift as a Production Method in the East Texas Field."

M. FRANKEL has been elected president; R. R. FRANKEL, vice president; JULES FRANKEL, treasurer, and L. R. FRANKEL, secretary, of the newly organized Berkshire Oil Co., Houston, Tex. They formerly were owners and officers of Normandie Oil Co.

JOHN J. McPOLAN, who retired as division superintendent of the central division of Magnolia Petroleum Co., Dallas, Tex., on January 1, was honored at a dinner recently by his friends and fellow workers. O. D. STALLARD, Jr., formerly superintendent of gaugers for the company, has taken over Mr. McPolan's former position.

CHARLES E. CLOWE, geologist and independent operator of Ardmore, Okla., has been appointed executive manager of the Oklahoma Stripper Well Association. W. A. GOFORTH, of Tulsa, is president of the association. At a meeting of the directors in Tulsa last week a program to extend organization work was approved. Meetings will be scheduled in all of the oil centers.

A. J. SCHLOSSER, superintendent of the gas and gasoline department of the Barnsdall Oil Co., Tulsa, will retire March 1, and he will be succeeded by W. W. MANLEY, division engineer and assistant to Mr. Schlosser. Mr. Schlosser joined Barnsdall when it was the Potter Oil & Gas Co., of Pittsburgh, Pa. He helped to construct the South Penn Oil Co. gasoline plant in Maysburg, Pa., in 1903. He is giving up active work on account of poor health.

Well, He Has That A. B.

If Francis E. Rehm, elevated from production manager to manager of the labor relations department of the Shell Oil Co., elects, he may walk up to President Wilbur at the commencement exercises of Stanford University next June and demand his diploma. When he matriculated in 1911 he nursed an ambition to pull an oar. The ambition was realized, and his name has been identified with Stanford both as a crew man and as a geologist. Not until this month, however, was his name put on the roll of Stanford graduates.

FRANCIS E. REHM

As a senior in the geology department Frank Rehm made his summer trip into the California wilds. He emerged with a bookful of notes, got a job, married, lost his notes, and never wrote a formal report on the trip. No report, no degree, the university authorities said. Joining the Shell, Frank was sent to Ventura. He was made superintendent there in 1923. Three years later he was transferred to the Los Angeles office, and in 1934 was made production manager. His latest advancement was made effective as of January 1. His office will be in San Francisco.

Recently the Stanford geology department decided to forget about that report and recommended an A.B. for Frank anyhow. "In view of Mr. Rehm's success in his profession," said Professor Eliot Blackwelder, head of the department, "and the fact his years of geological work demonstrated he was competent, the committee voted unanimously . . ."

C. A. MASSEY, independent operator, formerly of Fort Worth, Tex., has moved his offices to Evansville, Ind.

H. A. MUSICK, Pittsburgh, Pa., speaking before a meeting of gasoline dealers in Chambersburg, Pa., declared that if price wars were eliminated the retail gasoline industry could employ 30,000 additional men.

J. EARLE BROWN, consulting geologist and one of the charter members of the Fort Worth Geological Society, was elected president of that body for 1939. J. H. MARKLEY, with the Texas Company in Fort Worth, was named vice president and VERNON LIPSCOMB, with the Pure Oil Co., was named secretary-treasurer.

A. M. CROWELL, chief agent for the Arkansas Board of Conservation, gave an address in Texarkana, Ark., last week for oil operators and others interested in the Miller County extension of Rodessa. Citing the advantages to be obtained from repressuring the field, he said that greatly increased recovery could be gained through such a plan. O. C. BAILEY, chairman of the board, and J. D. REYNOLDS, board member, were other speakers.

WILLIAM O. BEALL, associate general counsel of the Sinclair Prairie Oil Co., was named president of the Osage Oil and Gas Lessees Association at the annual meeting. W. P. Z. GERMAN, general attorney of the Skelly Oil Co., was reelected vice president, and appointed chairman of the legal committee. CLAREL B. MAPES, secretary-treasurer of the Mid-Continent Oil and Gas Association, was renamed secretary-treasurer. All members of the executive committee were reappointed.

SHIFTS: C. B. ROACH, engineer, Royal Dutch-Shell, from Rutherford, N. J., to Iowa, La.; T. V. JENKINS, superintendent, Stanolind Crude Oil Purchasing Co., from Beaumont, Tex., to Jennings, La.; KATHARINE W. CARMAN, geologist, Felmont Corp., from Dallas, Tex., to Chicago; DAN H. SHOLTUS, superintendent, Phillips Petroleum Co., from Graham, Tex., to Thrifty, Tex.; J. D. HUNNICUTT, party chief, Shell Petroleum Corp., from Magnolia, Ark., to Mansfield, La.; A. Y. LEWIS, producer, from Mattoon, Ill., to Tyler, Tex.; R. KENT WADDELL, geologist, British American Oil Producing Co., from Mattoon, Ill., to Wichita, Kans.; B. F. TOMBLIN, producer, from Salem, Ill., to Evansville, Ind.; C. C. ZIMMERMAN, Texas Co., from New Iberia, La., to Baton Rouge, La.; NED W. EASLEY, drilling contractor, from Vandalia, Ill., to Evansville, Ind.; E. I. HEAD, engineer, Gulf Oil Corp., from Terre Haute, Ind., to Lawrence, Kans.; A. E. CHESTER, engineer, Socony-Vacuum Oil Co., from Mount Pleasant, Mich., to Salem, Ill.; H. S. AUSTIN, Standard Oil Co. of New Jersey, from New York to the American Club, London, England; RACHEL T. BEATY, producer, from Warren, Pa., to Fort Lauderdale, Fla.; F. G. BOK, engineer, Shell Oil Co., from Los Angeles, Calif., to Bakersfield, Calif.; C. M. HALL, superintendent, George F. Getty, Inc., from Santa Fe Springs, Calif., to Bakersfield, Calif.; J. J. SVOBODA, president, Lucky Strike Oil Co., from Topeka, Kans., to Lecompton, Kans.; W. B. EMERY, geologist, Ohio Oil Co., from Casper, Wyo., to Findlay, Ohio; R. L. AKIN, superintendent, British American Oil Producing Co., from Tulsa to Dallas, Tex.; J. T. FURLONG, director, Barnsdall Oil Co., from New York to Pittsburgh, Pa.

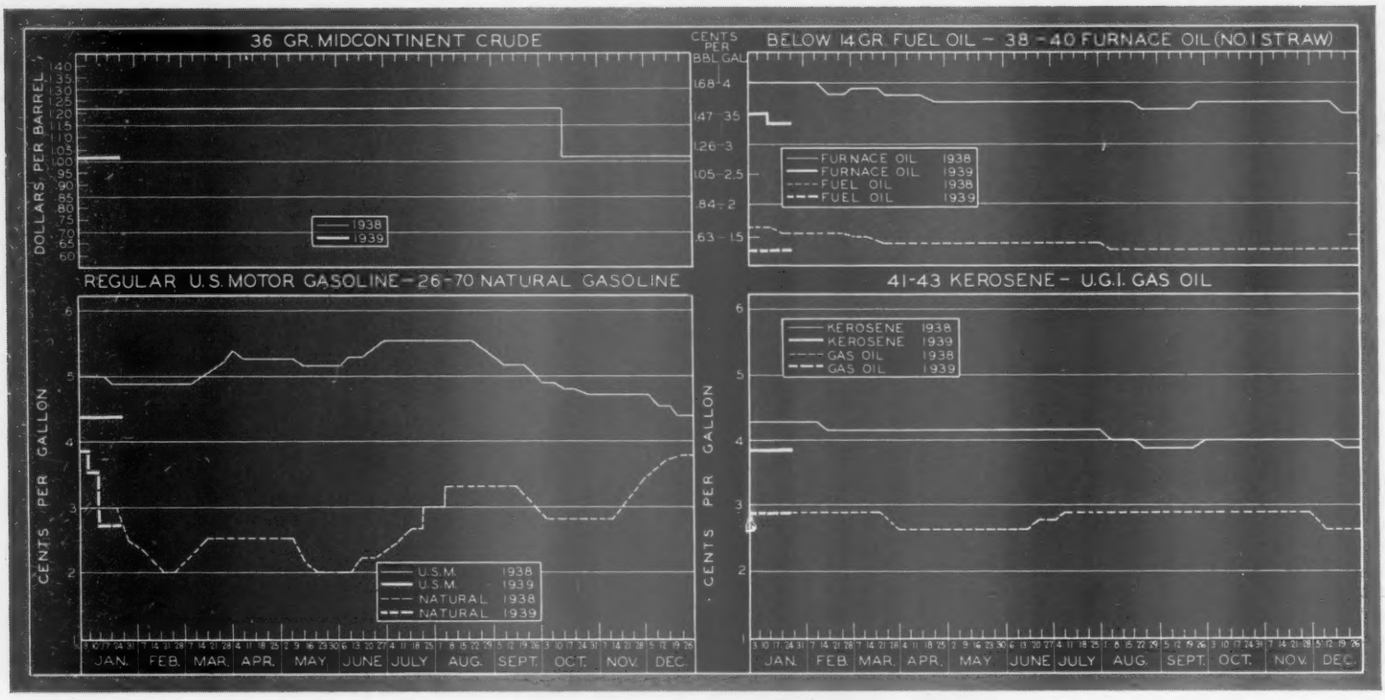
BOB BERRY, assistant municipal counselor in Oklahoma City, resigned last Tuesday to take a position in the land department of the Phillips Petroleum Co. He is expected to be stationed in Bartlesville, Okla.

MARCUS J. HANNON has been appointed manager of operations of the Shell Union Oil Corp. in metropolitan New York, and JAMES S. MORSE has been advanced to a similar post in the Atlantic division. Mr. Hannon formerly was manager of the Atlantic division, with headquarters in Hartford, Conn. He started with Shell in 1929 as an engineer in Boston. Mr. Morse began as a pump mechanic's helper for Shell in Brooklyn seven years ago.

THERON WASSON, chief geologist for Pure Oil Co., spoke at the luncheon meeting of the Investment Analysts Club of Chicago at the Palmer House last week. His subject was the search for new oil fields as illustrated by the new pools in Illinois.

HARRY BROWN, of Keyport, N. J., who sued an oil company for the loss of his dog's hearing in an automobile accident three years ago, was awarded a verdict of $50. The bulldog was his own witness, paying no attention to Mrs. Brown's "Here, Teddy! Here, Teddy!" as he ran about the courtroom.

TOBIN S. CURTIS, head of the Dexter Curtis Co., Madison, Wis., said to be the nation's largest manufacturer of horse-collars and -pads, has announced sale of the firm's assets to a company in North Baltimore, Ohio, striking evidence of what gasoline and motor vehicles have done to some other industries. Mr. Curtis, grandson of Dexter Curtis, who founded the business in 1870, said production had been abandoned in Madison, owing to almost complete drying up of demand, but that the branch in Birmingham, England, would be continued.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1938
1939
CENTS PER BBL. GAL.
BELOW 14 GR. FUEL OIL – 38 – 40 FURNACE OIL (NO. 1 STRAW)
FURNACE OIL 1938
FURNACE OIL 1939
FUEL OIL 1938
FUEL OIL 1939
REGULAR U.S. MOTOR GASOLINE – 26 – 70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. 1938
U.S.M. 1939
NATURAL 1938
NATURAL 1939
41-43 KEROSENE – U.G.I. GAS OIL
KEROSENE 1938
KEROSENE 1939
GAS OIL 1938
GAS OIL 1939
JAN. FEB. MAR. APR. MAY. JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Furnace Oils Stir Anxiety in Group 3 Market; Gasoline Behaving Better

By T. F. SMILEY

Mild weather continued to plague the heating oils in the Group 3 refinery market this week. The naturals were poised irresolutely at last week's prices, leaving observers to wonder which way they would go next. Moderate improvement was discernible in the motor fuels.

Notwithstanding the steady drop in total stocks of gas oils and distillates, Mid-Continent and Midwest refiners were having their troubles. Some of them, favorably situated as to financial resources and storage facilities, were refusing to budge from ruling prices, but operators hard pressed for immediate outlets were taking what they could get. Brokers said No. 1 prime white could be bought at 3¼ cents, for resale, at plants under particularly severe pressure.

Threaten to Store Heating Oils

Some refiners, in rebellious mood, declared they would store their furnace oils and carry them over to the next season rather than sell them at a sacrifice, though realizing they would be taking a chance of facing the same sort of difficulty again. Inventories on the Atlantic seaboard and the Gulf Coast were reported to be 7 per cent lower than they were last year, while those in the Mid-Continent were 10 per cent higher.

Natural gasoline, which took a spectacular plunge two weeks ago, leveled off, at least temporarily. The large manufacturers evince unwillingness to sell at the prevailing prices in order to attract business, and they are giving the open market scant consideration. Enough spot orders are finding their way to the small plants to keep their inventories from piling up seriously. Jobber demand was showing a mild disposition to expand this week. Favorable and unfavorable market factors were so nearly in balance that the direction of the next move in natural gasoline prices was something to guess at. Current low prices have not stimulated as much buying as had been expected.

Refiners were feeling a little better about the motor fuels, some predicting that a definite upward movement would be seen within a week or two. Shutting down of the Atlas plant in Shreveport and the Sinclair plant in Gladewater, Tex., were mentioned as likely to benefit the market. Consumption continued at an unexpectedly high level. A few independent jobbers in Standard Oil Co. of Indiana territory are now buying the new 67-octane third-grade material. Most of them say they have decided not to handle it till they see what sort of reception it gets between now and the spring motoring season.

Refined Oil Market Barometer

Notwithstanding seasonal slowing up in most areas, gasoline consumption is still at a higher level than usually is recorded at this period of the year. In the Mid-Continent and midwestern territory, tankcar prices continue abnormally low, but a slightly stronger tone appears. Heating oil inventories rising in interior regions, but declining in the East. Naturals in need of buyers.

MID-CONTINENT. Gasoline not quite so soft. Heating oils slow. Naturals weak.

EAST COAST. Heating oils regaining lost ground. Motor fuel dragging.

GULF COAST. Burning oils sluggish. Kerosene slightly weaker. Gasoline weak.

PENNSYLVANIA. Gasoline weak, but showing moderate improvement. General market lifeless.

CALIFORNIA. Heating oil, smudge oil, and Diesel soft. Fuel oil weak.

CHICAGO. Spot gasoline market slow. Kerosene lifeless. Heating oils soft.

Watching the Octane Soar

Evidence accumulates that a movement toward higher-octane motor fuels was well under way long before the Standard of Indiana last month introduced a 67-octane gasoline to take the place of the old third grade and to sell at the same tankcar price. Analyses of leading house brands sold in the East revealed that several refiners had been selling a 70-octane third grade and a 74- to 75-octane regular grade since last July. One refinery executive who has been watching the octane trend predicts that the ratings will settle down to the following: Third grade, 70; regular, 75; premium, 80 to 82. Large commercial buyers seem to be the ones most pleased with the rise in antiknock ratings. A survey of gasolines used in the summer of 1938 made by the U. S. Bureau of Mines shows that the octane value of 90 per cent of samples examined were higher than those analyzed in the 1937 survey.

Wax acquired new strength in the last week and quotations were slightly higher. Heavy industrial oil inventories continue to shrink except in California, where stocks totaling 87,000,000 bbls. assume the proportions of a major problem. Offerings in the Group 3 territory are plentiful, but there is less readiness to shave quotations. Kerosene was dull, in sympathy with the soft market in heating oils.

Cold Wave Stimulates Demand for Light Fuel Oils in East

By H. STANLEY NORMAN

NEW YORK, Jan. 23.—A full week of cold weather along the North Atlantic seaboard during which temperatures were consistently below the freezing point stimulated the movement of light domestic and residual fuel oils to the highest level attained this winter. The market for all grades of fuel oil is practically unchanged from the preceding week. Failure of the market structure to improve with the bulge in demand experienced in the past 10 days or two weeks is not surprising. While the entire northeastern seaboard, north of Washington, has been in the grip of subfreezing temperatures, the fuel oil demand is hardly more than normally expected for midwinter. Furthermore, the present cold weather was preceded by two and a half months of comparatively mild temperatures, broken only by intermittent and brief cold snaps, during which consumption was below normal.

There has been no apparent interruption in the industrial demand for residual fuel oils and this class of consumption, coupled with the bulge in requirements for heating office buildings, churches, theaters and stores, has stimulated movement. Reports were current in New York, however, that tank-wagon delivery of No. 6 fuel oil could be obtained at 2.65 cents per gallon. Most sellers, nevertheless, said they were asking from 2.85 to 3.05 cents per gallon.

The Gulf Coast market for residual fuel oil in cargoes remains firm, according to information in New York. The Gulf Coast cargo market ranges from 67½ cents to 70 cents per barrel, depending on gravity specified in the inquiries from buyers. Activity in the coastwise and export trade has not been particularly brisk despite the current drain on stocks in bulk plants. The reluctance or indifference of buyers is apparently due to the sagging tanker charter market which suffered a precipitous drop early last week. No signs of recovery in the boat charter rates appeared up to the end of last week and, on the contrary, some observers expected the decline to be extended. The decline in charter rates applied to boats in foreign service as well as those engaged in coastwise trade.

On January 17 two boats were fixed for light crude oil movement from the Gulf to north of Hatteras at 19 cents per barrel, reflecting a drop of 2 cents per barrel from the last fixture for the transport of the same class of material. Two clean tankers were arranged for trips up the coast. One of the clean boats was fixed at 20 cents per barrel for gasoline, 21 cents for kerosene and 22 cents for light fuel oil. The other was fixed for gasoline at 21 cents for January loading. The rates on the two clean tankers represent declines of 8 and 7 cents, respectively, as regards gasoline, from the last clean tanker chartered from the Gulf to north of Hatteras. With the trend in tanker rates pointing downward, buyers of products on the Gulf Coast who might be active purchasers otherwise are waiting to see the charter market hit bottom.

Anxiety over the crude price structure is voiced in many eastern oil centers giving further cause for the apparent lack of interest in the primary petroleum markets. The fear is increasing that current movement of crude oil in certain districts at "knock-down" prices will undermine the entire structure and that any adjustment in the general market will be reflected promptly in product quotations. There is little doubt in eastern market centers that current trends in the tanker market and the uncertainty over crude prices are playing vital parts in the present interest and activity in the refinery product operations.

The northeastern Atlantic seaboard kerosene market appears to be rather sensitive at the moment. Tankcar prices are relatively steady at 4⅝ to 4¾ cents with some brands quoted at 4⅞ cents, but tank-wagon suppliers are guided exclusively by weather conditions and local situations. The most recent tank-wagon adjustment in this general area was a cut of a half cent per gallon in Socony-Vacuum Oil Co.'s quotation in Rochester. The price was reduced to 8 cents per gallon on January 16. In the kerosene tank-wagon market adjustments in New England in December prices at most points were lowered a half to 1¼ cents by Socony-Vacuum. The deepest cut was made at Portland, Me., where the price was lowered from 8¾ to 7½ cents per gallon. The New Haven price was cut a cent per gallon to 6 cents meeting a local situation which was reported last week to have been corrected to a slight degree. Although unreported in official market quotations, it was said that some tank-wagon suppliers of kerosene in the Boston and New Haven markets had elevated their postings a half cent with last week's bulge in demand.

Furnace oils are currently in brisk demand throughout the eastern territory north of Washington. Prices in most instances are unchanged at a range of 4⅛ cents per gallon in barges to 4¼ cents per gallon in tankcars for No. 2 oil. Unconfirmed reports were heard last week that some No. 2 furnace oil had moved in the barge market at 4 cents per gallon. Seasoned fuel oil market observers thought the price of 4 cents at least could not be duplicated at the present.

The Gulf Coast market for No. 2 fuel oil ranges from 3⅜ to 3⅝ cents per gallon, depending on the Diesel index and other specifications. Kerosene on the Gulf Coast is quoted to those buying in cargo quantities at a range of 3⅜ to 4⅛ cents.

Motor fuel movement has been at the winter season's lowest level in the past two weeks in the northeastern territory. The snow that blanketed most of the New York and New England territory January 13 has remained on the highways, discouraging automobile operation. Motor fuel markets are on reasonably firm ground, however, and the tank-wagon structure in the New York Harbor district ranges from 5¾ to 6¼ cents per gallon for 65-octane material. Reports persist that 65-octane motor fuel can be obtained at 5½ cents per gallon in the New York tankcar market but all efforts to localize offerings at this level have failed. On the contrary, most suppliers insist that 6 cents per gallon is their minimum and are inclined to discount availability of the material at 5¾ cents, much less 5½ cents.

There has been no recent change in the Gulf Coast motor fuel cargo market with the range remaining between 4⅜ cents for low octane material to 5⅛ cents for 68-70 gasoline. The current statistical position of motor fuel stocks is satisfactory to a majority of refiners and the distress material available to the eastern seaboard market is exceedingly scarce. Retail conditions in the motor fuel market are less satisfactory and there is a growing weakness in the western Pennsylvania refinery tankcar structure owing in large degree to the absence of inquiries and shipping instructions.

A. P. I. Weekly Refinery Statistics

Week Ending January 21, 1939

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	494,000	17,871,000	11,841,000
Appalachian	85.9	101,000	3,099,000	777,000
Indiana, Illinois, and Kentucky	89.5	449,000	12,292,000	6,987,000
Oklahoma, Kansas, and Missouri	81.6	241,000	6,777,000	4,290,000
Inland Texas	50.3	124,000	1,780,000	1,979,000
Texas Gulf	89.5	838,000	10,472,000	10,323,000
Louisiana Gulf	97.3	137,000	2,196,000	1,848,000
North Louisiana and Arkansas	55.0	45,000	483,000	883,000
Rocky Mountains	54.2	44,000	1,454,000	698,000
California	90.0	480,000	14,261,000	98,165,000
Total reported	85.8	2,953,000	70,685,000	137,791,000
Estimated unreported	.....	357,000	4,770,000	3,300,000
*Estimated total	.....	3,310,000	75,455,000	141,091,000
*Estimated total previous week	.....	3,260,000	73,752,000	142,460,000
*January 22, 1938	.....	3,220,000	82,785,000	118,433,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending January 14, 1939	271,819,000 barrels
Week ending January 7, 1939	272,325,000 barrels
Week ending January 15, 1938	303,679,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of January 24, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	8.7
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.0	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	16.3	13.8	5.0	10.2
Detroit, Mich.	13.1	11.6	4.0	9.0
Grand Rapids	14.8	13.05	4.0	9.7
Saginaw	15.8	14.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†9.5
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. Dak.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	11.9	4.0	7.5
St. Louis*	14.2	13.2	4.0	8.0
St. Joseph	14.4	11.2	4.0	9.3
Wichita, Kans.	13.9	10.6	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective November 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents, 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 4.75 cents; 400 gallons and over 3.75 cents. Stanolex grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. con'r.	Tank-car dlr.	Inc. tax	tank-wag.
Atl'tic City, N. J.	12.7	10.9	4.0	8.0
Newark	12.7	10.9	4.0	8.0
Annapolis, Md.	14.35	12.85	5.0	9.5
Baltimore	13.75	12.25	5.0	8.5
Cumberland	16.15	13.65	5.0	10.0
Wash'g'n, D. C.	12.0	10.50	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	11.0
Charles'n, W. V.	16.55	14.05	6.0	12.6
Parkersburg	14.85	13.35	6.0	11.2
Wheeling	15.75	14.35	6.0	12.2
Charlotte, N. C.	18.15	15.65	7.0	12.1
Hickory	18.65	16.15	7.0	12.5
Mt. Airy	18.45	15.95	7.0	12.3
Raleigh	17.75	15.25	7.0	11.6
Salisbury	18.25	15.75	7.0	12.2
Charleston, S. C.	16.75	14.25	7.0	10.6
Columbia	17.25	15.25	7.0	11.6
Spartanburg	18.45	15.95	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective December 19, 1938, the following policy for the sale of motor fuel by tank-wagon to commercial consumers in North Carolina was instituted: Single deliveries of 50 to 149 gallons, inclusive, 1 cent over posted consumer tankcar price; single deliveries of 150 gallons and over, .5 cent over posted consumer tankcar price; deliveries of less than 50 gallons, 6 cents above posted consumer tankcar price.

Effective December 16, 1938, the following policy for the sale of motor fuel by tank-wagon to commercial consumers in South Carolina was instituted: Single deliveries of 25 gallons to 149 gallons, inclusive, 1 cent over posted consumer tankcar price; single deliveries of 150 gallons and over, .5 cent over posted consumer tankcar price; deliveries of less than 25 gallons at one time, 6 cents above posted consumer tankcar price.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline				Kero.
	Tank-wag. con'r	Net dlr.	Inc. tax	tank-wag.
Atlanta	20.5	17.5	7.0	8.5
Augusta	19.5	16.5	7.0	10.0
Macon	18.0	15.0	7.0	11.0
Savannah	19.0	16.0	7.0	8.0
Birm'ham, Ala.	21.0	18.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	17.5	14.5	7.0	9.5
Vicksburg	19.0	16.0	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	20.0	17.0	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	19.0	16.0	8.0	8.0
Lexington, Ky.	19.0	16.0	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	16.0	5.0	15.0
Pueblo	14.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	15.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	18.0	6.0	15.5
Helena	20.0	6.0	15.5
Salt Lake City, Utah	16.0	5.0	16.0
Boise, Idaho	19.0	6.0	18.0
Twin Falls	19.5	6.0	18.0
Albuquerque, N. M.	16.0	*6.5	10.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Dlvided dlr.	Inc. tax	tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax.	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	T'wag. dealer	T'car consr.	Inc. tax	tank wag.
Albany	13.8	11.75	5.0	8.0
*Met. N. Y.:				
Manhat., Bronx	12.9	11.75	5.0	8.0
Staten Island	12.9	11.75	5.0	8.0
Queens, B'klyn.	12.9	11.75	5.0	8.0
Buffalo	12.5	12.0	5.0	7.5
Rochester	13.5	12.7	5.0	7.5
Syracuse	13.5	12.4	5.0	8.5
Boston, Mass.	12.5	10.5	4.0	7.0
Portland, Me.	14.0	11.75	5.0	7.5
Manch'ter, N. H.	14.5	12.3	5.0	8.0
Burlington, Vt.	14.7	12.3	5.0	9.0
Springf'd., Mass.	13.0	11.0	4.0	7.5
Worcester	13.0	11.0	4.0	7.5
Hartford, Conn.	12.9	10.9	4.0	6.5
New Haven	12.3	10.8	4.0	6.0
Providence, R. I.	12.5	10.5	4.0	7.0

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank-wag. con'r.	Tank-car dlr.	Inc. tax	tank-wag.
Philadelphia, Pa.	13.0	12.0	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	...	5.0	10.5
Wilmington	12.5	...	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	19.25	16.75	*10.0	†11.0
Baton Rouge	17.25	14.75	8.0	‡10.5
Alexandria	17.25	14.75	8.0	‡12.5
Lafayette	17.50	15.00	8.0	‡12.5
Lake Charles	17.25	14.75	8.0	‡12.5
Shreveport	16.00	13.50	8.0	‡11.0
Knoxville, Tenn.	20.50	18.00	8.0	14.5
Memphis	18.50	16.00	8.0	12.5
Chattanooga	20.00	17.50	8.0	14.0
Nashville	19.50	17.00	8.0	12.0
Bristol	17.00	16.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective Dec. 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gallons, consumer tankcar plus 2 cents per gallon; 50 to 199 gallons, consumer tankcar plus 1 cent per gallon; 200 gallons and over, consumer tankcar plus .5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Omaha	17.5	16.0	6.0	10.3
McCook	17.5	16.0	6.0	10.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.4	6.0	11.0
Scottsbluff	17.0	14.9	6.0	11.2

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	13.5	5.0	7.0
Oklahoma City	11.5	5.0	6.0
Tulsa	10.0	5.0	6.0
Fort Smith, Ark.	13.25	5.0	7.5
Little Rock	16.75	7.5	9.0
Texarkana	12.0	5.0	8.0

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	13.0	15.0	5.0	8.0
Fort Worth	15.0	17.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	20.0	6.0	14.5
Toronto, Ont.	21.0	6.0	15.5
Hamilton, Ont.	21.0	6.0	15.5
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Continental Oil Co. January 12 reduced dealer gasoline 1 cent in Tulsa; January 13, reduced dealer gasoline 3 cents in Roswell; January 14, advanced dealer gasoline 2 cents in Cheyenne and reduced dealer gasoline 2 cents in Texarkana.

Standard Oil Co. (Kentucky) December 31 reduced tank-wagon consumer and net dealer gasoline 1 cent in Tampa.

Standard Oil Co. of Louisiana January 14 reduced dealer tank-wagon and consumer tankcar gasoline 2 cents in Bristol.

Standard Oil Co. (Nebraska) January 12 reduced tank-wagon kerosene .6 cent in Scottsbluff; January 19, advanced dealer gasoline 1 cent in Scottsbluff.

Standard Oil Co. (Indiana) January 13 reduced dealer gasoline 1 cent in Milwaukee; January 16, reduced tank-wagon gasoline .5 cent in St. Louis.

Socony-Vacuum Oil Co., Inc., reduced tank-wagon kerosene prices as follows: Rochester, .5 cent January 16 and .5 cent January 19; Boston, .5 cent January 16; Portland, 1.25 cents December 1; Manchester, .5 cent December 15; Worcester, .5 cent December 19; New Haven, 1 cent December 16; Providence, .5 cent December 12.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted.

Prices as of January 24, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03¼	.03⅜
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04½
60-62 400 grades:		
62 octane and below	.03¼	.03½
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04⅝
64-66 375	.04	.04⅛
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor Grades:		
62 octane and below	.03¼	.03⅜
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04⅝
60-62 400	.03⅜	.03⅝
64-66 375	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04¼	.04½
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03½	.03¾
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
60-62 400 grades:		
62 octane and below	.03½	.03¾
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¼	.04¾
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07⅛

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04¼
60-64.9	04½	.04⅝
65 octane and higher		.04⅝
68-70		.05

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02¾
Grade 18-55		.03¼

NORTH TEXAS—

Grade 26-70		.02¾
Grade 18-55		.03¼

CALIFORNIA—

75-85 375-390	.06¼	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e. p.	.04	.04¼
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.04⅝	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04⅛	.04¼

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45	.04⅝	.04⅞
46	.04¾	.05
47	.04⅞	.05⅛

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04⅝	.05⅜

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03¾	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3 zero to 15, 28-32	.03	.03¼
No. 3, 15 and above, 28-32	.02⅜	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅜	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3, zero to 15, 28-32	.03	.03¼
No. 3, 15 and above, 28-32	.02⅜	.02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03¾	.04⅛

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03¼
43-47 Diesel		.03¼
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)		.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
20 pourpoint	.15	.15½
25 pourpoint	.14	.14½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08¾	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¾	.08
450-3-4	.07¾	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11¼
400-5-6	.09¼	.11½
450-5-6	.09¼	.11¾
500-5-6	.09¼	.11¾
600-5-6⅝	.09¼	.11¾
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.16	.16½
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
25 pourpoint	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.18	.18½
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
25 pourpoint	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale		.0250

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0375
125-127 (a.m.p.) wax		.0390
128-130 (a.m.p.) wax		.0400
130-132 (a.m.p.) wax		.0435
133-135 (a.m.p.) wax		.0465
135-137 (a.m.p.) wax		.0490
124-126 (a.m.p.) w.s.		.0230
124-126 (a.m.p.) y.s.		.0230
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02¾	.02⅞
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¾
Snow white	.06⅛	.06¾
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04½
60-62 400	.04¾	.04½
61-63 390	.04½	.04⅝
64-66 375	.04½	.04⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03¾	.04
41-43 water white	.03¾	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0235	.0245
124-126 y.s.	.0235	.0245

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Van, Tex. (Oct. 11, 1938)* ..... .93
Talco, Tex. (Oct. 11, 1938)* ..... .55
Rodessa, Tex. ..... See North Louisiana gravity schedule
Cass and Panola counties, Texas ..... See gravity schedule
Altus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 12) ..... .81
Clay Creek, Tex. ..... .85

*Humble Oil & Refining Co. †Gulf Refining Co.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Tide Water Associated Oil Co. Clay Creek posted by Sun Oil Co.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)* $1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)† ..... See note below
Gibson, La. (Oct. 11, 1938)† 1.04
Garden Island, La. (Oct. 12, 1938)‡ . 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ .. 1.14
Hardin, Tex. (Oct. 12, 1938)¶ 1.02
Tepetate, La. (Oct. 11, 1938)§ 1.03
Villa Platte, La. (Oct. 11, 1938)§ ... 1.03
Abbeville, La. (Oct. 11, 1938)§ ..... See note below
Bosco, La. (Oct. 13, 1938)¶ 1.02
Creole, La. (Oct. 12, 1938)¶ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)¶ ... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)** 1.08
Long Lake, Tex. (Oct. 13, 1938)** . 1.08
Segno and Wing (Oct. 13, 1938)** ..... See note below
Livingston (Oct. 11, 1938)† 1.10
Gibson, La. (Oct. 11, 1938)† 1.04

*Humble Oil & Refining Co. †Shell Petroleum Corp. ‡Texas Co. §Continental Oil Co. ¶Magnolia Petroleum Co. ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, $1.01, 2-cent spread to 40 degrees and over at $1.11. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.26. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26-26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* ..... $ .96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Spings (Oct. 12, 1938)† ..... .99
Mirando (Oct. 12, 1938)† ....
Government Wells (Oct. 13, 1938) ..... See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

North Louisiana and Arkansas

Smackover, Ark. (Oct. 5, 1938)* ... $ .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* .... See note below
Schuler, Jones sand ..... See note below
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Lisbon, La. (Sept. 19, 1938) ..... See note below

*Smackover posted by Standard Oil Co. of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938; Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia, and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Lima, Ohio ..... $ .90
Illinois old fields 1.05
Illinois basin 1.15
Princeton, Ind. 1.05
Western Kentucky 1.10
Greendale, Porter, and Crystal, Mich. (Jan. 6, 1939)* ..... .92½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Jan. 6, 1939)* ..... .90
Freeman-Redding, Mich, (Jan. 6, 1939)* ..... .82
West Branch and Arenac, Mich. (Dec. 13, 1938)* ..... .70
Allegan (Jan. 6) ..... .78
Bloomingdale (Dec. 19) ..... .84
Muskegon 1.00
Sherman, Mich. (Dec. 13, 1938)‡ ... .82
Eastern Kentucky:
Big Sandy River† 1.12
Kentucky River† 1.20

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)* .. $ .92
Elk Basin, Wyo. (Oct. 11, 1938)*† .. .90
Grass Creek, light, Wyo. (Oct. 11, 1938)*† ..... .90
Grass Creek, heavy (Oct. 11, 1938)† .40
Lance Creek, Wyo. (Oct. 11, 1938)* . .77
Rock Creek, Wyo. (Oct. 11, 1938)* .. 1.00
Iles, light, Colo. (Oct. 11, 1938)† .... .98
Iles, heavy, Colo. (Oct. 11, 1938)† ... .92
Dutton Creek, Wyo. (Oct. 11, 1938)† ..... See note below
Frannie, light, Wyo. (Oct. 11, 1938)† .55
Frannie, heavy, Wyo. (Oct. 11, 1938)† ..... .42
Hamilton dome, Wyo. (Oct. 11, 1938)† ..... .35
Midway, Wyo. (Oct. 11, 1938)† ..... See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)† ..... .646
Salt Creek (Oct. 11, 1938) .. See note below
Canon City, Colo. (Oct. 11, 1938)‡ .. .90
Florence, Colo. (Oct. 11, 1938)† 90
Cat Creek, Mont. (Oct. 11, 1938)‡ .. 1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡ .. .98
Lance Creek, Wyo. (Oct. 11, 1938)‡ . .77
Lea County, N. M. ..... See West Texas gravity schedule‡
Artesia, Jackson and Maljamar ..... See gravity table‡
Fort Collins and Wellington, Colo. ..... See gravity table‡
Eddy County, N. M. (October 11, 1938)¶ ..... .77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ¶Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents, 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep, takes Standard Oil Co. of Indiana Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

SOUTH PENN OIL CO.
(Effective January 21, 1939)

Pennsylvania Grade Oil in National Transit Lines (Bradford field) ... $1.80
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.43
Pennsylvania Grade Oil in Eureka Pipe Line lines 1.37
Pennsylvania Grade Oil in Buckeye Pipe Line lines 1.30
Corning Grade Oil in Buckeye Pipe Line Co. line (Oct. 18, 1938) .... .97

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective January 21, 1939)

Bradford, Pa. $1.80
Allegany, N. Y. 1.80

PENNZOIL CO.

Group A $1.73
Group B 1.72
Group C 1.71
Group D 1.70
Group E 1.68

PURE OIL CO.
(Effective January 21, 1939)

West Virginia $1.37

West Texas

See gravity table.
Pecos County (Oct. 11, 1938)* ..... $ .78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Canada

Ontario (Oct. 25, 1938)*

Petrolia $1.90
Oil Springs 1.97

TURNER VALLEY
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher $2.14
Discolored naphtha and crude oil, 40-40.9 gravity 1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity 1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Crude Oil Price Changes

The South Penn Oil Co., effective January 21, increased prices in the Pennsylvania Grade fields. The new prices follow: In National Transit lines, $1.80, a 12-cent advance; in Southwest Penn lines (southwest Pennsylvania oil), $1.43, a 9-cent increase; in Buckeye Pipe Line lines (southeastern Ohio oil), $1.30, a 12-cent advance, and in Eureka Pipe Line lines (West Virginia oil), $1.37, a 9-cent increase. The Tide Water Associated Oil Co. and New York Transit Co. increased Bradford and Allegany crude 12 cents to $1.80, and Pennzoil Co., Pure Oil Co. and other buyers met the prices in the fields in which they purchase crude.

Canadian Fields

(Continued from Page 236)

Vantage Oils No. 1, S half LSD 12, standing for some months at 175 feet, will likely be completed this spring. West Turner Petroleums No. 4, LSD 3, is rigging rotary outfit.

In Section 29-18-2w5, Command Oils No. 2 has been located in LSD 11, south of No. 1 producer. Royalite Oil Co. No. 39, LSD 3, will offset Consolidated Royalties No. 1 producer to the north.

In Section 17-18-2w5, where some of the largest wells in the field have been drilled, Anglo-Canadian Oil Co. No. 4 has derrick up in LSD 6, waiting for rotary outfit from No. 3. Anglo-Canadian No. 6 has been spotted in LSD 3. Extension Royalties No. 2 has been located in LSD 11, south of No. 1 producer.

In the south end, Theo. Grewer and associates No. 1, LSD 14, Section 5-18-2w5, standing at 150 feet, is arranging to resume this spring. West of the proven field, Inland Development Co. No. 1 has location in LSD 16, Section 18-18-2w5, in line with Anglo-Canadian No. 1, an outlying producer on the west flank.

East Side Drilling

On the Twin Dome structure, northeast of Turner Valley, Anglo-Canadian Oil Co. No. 1, LSD 7, Section 6-21-28w4, is below 3,287 feet. Acreage in the same area has been taken up by Commonwealth Petroleums, Ltd., and its subsidiaries, Command Oils and Commoil, Ltd.

Crude Prices by Gravities

	Oklahoma 1	Oklahoma and Kansas 2	North and Central Texas 3	Louisiana and Arkansas 4	East Central Texas 5	Gray County, Texas 6	Hutchinson and Carson counties, Texas 7	Raccoon Bend, Satsuma and Tomball, Texas 8	West Texas and Lea County, N. M. 9	Fort Collins and Wellington, Colo. 10	Anahuac and Dickinson, Texas 11	Refugio, Texas 12	Mirando and Duval Texas 13	Gulf Coast Texas 14	Cass and Panola counties, Texas 15	Beaumont and West Beaumont, Texas 16	Lockport, Iowa, Cameron Meadows, Louisiana 17	Artesia, Jackson, and Maljamar, N. M. 18	Iowa, Louisiana 19
Below 18	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.74	$.79	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.74	.79	....	$.79	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.74	.79	....	.79	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.55	....	.77	.82	.77	.82	....	.82	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.57	....	.80	.85	.80	.85	....	.85	.82	....	.83
22-22.9	.66	.74	....	....	....	....	....	$.95	.59	....	.83	.88	.83	.88	....	.88	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.86	.91	....	.91	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.89	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.92	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	.95	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	.97	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	.99	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.01	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.03	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.05	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.07	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.09	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.11	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.13	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.15	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.17	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.19	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.21	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.23	1.28	1.05	1.28	....	.85	....

Effective December 3, 1938, Humble Oil & Refining Co. revised its October price schedules as shown in Columns 3, 6, 7, 8, 11, 12, and 13. The only changes made were the discontinuance of prices on crude of 41, 42, 43, 44, and 45 degrees and over. Humble's new schedule stops at 40 degrees and over. Companies that met Humble's schedule of October 11, have conformed to the revised price schedule, stopping at 40 degrees and over.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938-39 High	1938-39 Low	Week ending Jan. 21 High	Week ending Jan. 21 Low	Week ending Jan. 21 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1937 High	1937 Low	1936 High	1936 Low
78	55	69½	68⅛	68⅛	Amerada Corp.	788,675	N.P.	50cQ	10-31-38	$2.00	$3.04	$2.52	114⅞	51½	125⅛	75
27⅝	17⅝	23⅛	22½	22⅝	Atlantic Refining	2,663,999	$25	25cQ	12-15-38	1.00	3.51	2.59	37	18	35⅛	26⅝
23¾	12⅛	20	18¾	18¾	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	1.91	1.14	43⅜	10⅛	38½	21
21⅜	10⅛	18	17¼	17¼	Barnsdall Oil Co.	2,250,344	$5	25cQ	2-1-39	1.00	0.85	1.01	35¼	10	28¼	14⅛
10¾	7	9	8⅝	8¾	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	2-15-39	.80	1.48	1.18	17⅞	7	17¼	11⅛
35⅝	21¼	30	28½	28½	Continental Oil of Delaware	4,682,583	$5	25cQ	3-31-39	‖1.00	2.98	2.05	49	24	44⅞	28⅛
9¾	5	7¾	7¼	7¼	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	0.94	—0.03	17⅝	4⅜	13⅞	6⅝
22⅝	12¼	15⅞	15⅝	15½	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-38	.60	2.86	2.57	35⅜	14	30⅞	17¼
17¾	10⅝	14¼	14	14	Mission Corporation	1,382,945	$10	$1	6-29-38	1.00	1.31	0.48	34	15	29⅞	16⅜
23	12½	14¼	13⅝	13¾	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	....	4.90	2.02	41⅜	17⅝	75½	19⅞
14⅞	8⅞	9⅝	9½	9⅝	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	1.30	0.70	22⅞	8	18	12⅛
15⅞	10¼	10⅜	10⅝	10⅜	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.39	1.58	29⅜	11⅜	23½	11⅜
9¼	6¼	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	....	1.18	0.52	17⅛	7	20⅝	12¼
44⅜	27¼	41½	39¾	39¾	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-39	‖2.00	5.42	4.02	64	30⅛	52⅜	33⅛
25⅜	15	22½	21⅝	22	Plymouth Oil Co.	1,029,800	$5	35cQ	12-12-38	1.40	2.85	1.65	29⅞	13	27¾	11⅞
13½	8¼	10½	9⅞	10	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	....	2.15	1.63	24⅜	8¾	27⅞	16
10¼	5	10¼	9¾	9¾	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	.50	0.35	...	6½	4⅛	..	..
27½	15½	22	21	21½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-38	1.00	1.97	2.00	54⅛	16	44	30½
18⅜	10	14⅛	13½	13⅝	Shell Union Oil	13,070,625	N.P.	35c	12-20-38	.70	1.44	1.57	34¾	14⅞	28¼	14¾
34¾	18½	25¾	24⅞	24⅞	Skelly Oil	1,003,949	$15	50c	12-15-38	1.00	6.07	4.42	60⅝	26½	47⅜	19½
16⅜	10¾	13⅜	13	13	Socony-Vacuum	31,151,071	$15	25c	9-15-38	.50	1.82	1.38	23¼	13	17½	12¼
34⅞	25⅛	28⅝	27¾	27¾	Standard Oil of California	13,014,754	N.P.	35cQ†	12-15-38	1.40	3.17	1.79	50	27⅛	47⅝	35
35½	24¾	28½	27¾	28⅜	Standard Oil (Indiana)	15,267,030	$25	25cQ	12-15-38	1.00	3.66	3.09	50	26½	48½	32¾
50⅜	32½	..	..	..	Standard Oil of Kansas	112,837	$10	$2	12-8-38	2.00	6.93	1.91	43	30⅜	31	25
58⅜	39¾	51	49⅝	49⅝	Standard Oil of New Jersey	26,224,767	$25	50c§	12-15-38	§1.50	5.64	3.73	76	42	70⅜	51⅛
66	45	61	60	61	Sun Oil	2,316,484	N.P.	25cQ	12-15-38	1.00	3.86	3.25	77½	44½	91	70
4¼	1⅜	3	2⅞	3	Superior Oil Corp.	1,388,079	$1	....	.....	....	0.32	0.14	7⅜	1½	6¾	3
49⅝	32⅝	47¼	45⅛	45⅛	Texas Corp.	10,875,006	$25	50cQ	1-5-39	2.00	5.02	4.10	65⅛	34⅜	55¼	28⅞
5⅞	2⅝	5¼	5	5	Texas Gulf Producing Co.	888,140	N.P.	15c	12-15-38	.15	0.68	0.93	9⅝	2	8⅞	4⅝
12½	7	9¾	9½	9½	Texas Pacific Coal & Oil	888,140	$10	10c	12-1-38	.40	1.11	0.72	16⅝	5⅝	15¼	7½
15⅜	10⅛	13⅜	13	13	Tide Water Associated	6,369,175	$10	25cQ	12-1-38	1.00	2.08	1.03	21⅝	13⅛	21⅜	14⅜
22½	17⅛	19½	18½	19¼	Union Oil of California	4,666,270	$25	30cQ	2-10-39	1.20	2.58	1.40	28¼	17½	28½	20⅝
23⅝	20	21¾	21⅛	21⅛	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-38	1.30	1.70	1.76	31½	22	31⅝	22⅝
3⅝	1⅝	3½	3⅜	3⅜	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	0.24	—0.06	6¼	1⅜	5¼	2⅜

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds.

New York Curb Exchange

1938-39 High	1938-39 Low	Week ending Jan. 21 High	Week ending Jan. 21 Low	Week ending Jan. 21 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1937 High	1937 Low	1936 High	1936 Low
11¾	5	9	8⅜	8⅜	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	$0.27	$0.28	10	6⅜	..	..
10¼	4⅞	6½	6⅜	6⅜	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	....	1.90	1.26	21⅜	7	21	13¼
39	22½	29½	28¼	28¾	Buckeye Pipe Line Co.	200,000	$50	50c	12-15-38	2.00	4.02	4.40	51½	36	50	39⅜
130	97	130	128	128	Chesebrough Mfg. Co.	120,000	$25	$2Q†	12-19-38	6.50	6.73	7.46	12	95½	124¾	105
11	5⅛	8	7¼	7⅜	Cities Service (new)	3,714,317	$10	....	6-1-32	....	1.02	0.13	5⅜	1½	7⅜	3
2⅜	⅞	1	1	1	Cosden Petroleum	462,551	$1	....	.....	....	0.19	...	5½	1½	4½	1½
27½	17½	23¼	22⅜	23	Creole Petroleum	6,975,383	$5	50cSA†	12-15-38	1.00	1.61	1.23	38¾	20¼	39	19⅞
10¼	5½	..	..	..	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	1.36	1.26	18⅝	6½	18⅛	9
3½	1½	2	1¾	1⅞	Derby Oil & Refining	263,162	N.P.	....	.....	....	1.34	0.66	8⅜	2¼	6¾	1⅞
31	17⅛	..	..	..	Eureka Pipe Line	50,000	$50	50c	2-1-39	3.00	—0.12	—0.62	47½	24½	47½	38½
46⅞	33	39½	38½	38½	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-38	1.00	3.51	2.90	63½	33	59	36
72⅝	56	67¾	66⅝	66⅝	Humble Oil & Refining	8,987,840	N.P.	62½c	12-27-38	3.00	5.22	3.80	87	54⅞	80	57
19½	14½	16⅝	16¼	16¼	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	1.25	0.98	0.95	24¼	14½	24½	19¾
9⅜	6	6¾	6¾	6¾	Indiana Pipe Line	300,000	$10	20c	11-15-38	.50	1.03	1.00	15	5⅜	9¾	5½
31¼	21	27	26¼	26¼	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	2.50	...	1.81	39½	23½	39⅝	32⅝
5	2⅛	3	3	3	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	0.17	0.20	8¾	2⅜	5¾	2⅝
25⅛	15⅝	19	18½	18⅝	Lion Oil Refining	434,820	N.P.	25cQ	12-15-38	1.00	2.17	1.43	34	12½	17¾	7⅜
10⅝	6⅝	9½	9	9⅜	Lone Star Gas	5,553,747	N.P.	20c	12-22-38	.60	1.14	1.02	14¼	5¼	14¼	9⅞
9⅜	6½	7⅛	6⅞	7⅛	Louisiana Land & Exp.	2,977,449	N.P.	5c spl.	12-23-38	.45	0.58	0.64	15¼	6¾	15⅝	9⅜
9¾	6⅜	8½	8⅜	8½	Midwest Oil Co.	998,444	$10	50c	12-15-38	1.00	1.14	0.95	14⅝	6¼	..	..
5⅜	4½	5	5	5	Mountain Producers	1,593,584	$10	30cSA	12-15-38	.60	0.76	0.62	7⅞	4⅛	8⅜	5
14⅝	11½	13⅛	13	13⅛	National Fuel Gas	3,810,183	N.P.	25cQ	1-16-39	1.00	0.96	1.19	19½	12	23	17⅝
9¼	6½	7⅝	7⅝	7⅝	National Transit	509,000	$12.50	40c	12-15-38	.75	1.19	0.79	12½	7¼	15⅜	9¼
2⅝	1½	1⅝	1⅝	1⅝	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	0.02	0.02	5	1⅛	6⅝	1⅝
4½	3½	4¼	4	4	New York Transit	100,000	$5	15c	10-15-38	.25	0.49	0.34	5⅜	3⅞	6¼	4¼
6	4	..	..	..	Northern Pipe Line	120,000	$10	15c	12-1-38	.35	0.78	0.66	12⅜	5⅜	9⅜	4⅞
7¾	6⅜	7	6⅝	6⅝	Pantepec Oil	2,441,142	$1	....	.....	....	...	0.05	9⅝	2⅜	10⅛	3¼
4½	1⅝	2⅛	2	2	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	—0.17	0.45	12⅜	2	19⅛	4½
4	2⅛	2⅞	2⅝	2⅝	Ryan Consolidated	296,931	N.P.	....	.....	....	0.46	...	6½	2¼	4⅜	1⅞
5⅜	3¼	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	.30	0.85	0.41	7¼	3⅞	7⅞	3¼
39	28¾	34¼	33¾	34	South Penn Oil	1,000,000	$25	37½cQ	12-24-38	1.75	4.64	3.59	56	35	44	32½
22¼	17	17	17	17	Southwest Penna. Pipe Lines	35,000	$50	50cQ	12-28-38	2.00	0.95	0.97	42	20	60	44
18¾	15	18⅝	17⅝	18¼	Standard Oil of Kentucky	2,604,790	$10	50cQ†	12-15-38	1.25	1.60	1.46	21⅛	14¾	23⅜	17⅛
8¾	5½	..	..	..	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	....	—0.58	0.42	13¾	8	14⅝	11
22¾	16¼	21⅛	20¾	21	Standard Oil of Ohio	753,740	$25	25c	12-15-38	1.00	3.67	4.77	45	16	40	21¾
3¼	2	2¼	2⅛	2¼	Sunray Oil	2,006,176	$1	10c	12-24-37	.05	0.42	0.26	4⅞	2	5	2⅝
5¼	3½	3¾	3⅝	3⅝	Texon Oil & Land	936,024	$2	15cQ	9-30-38	.60	0.51	0.36	7⅝	2	9¾	5⅜
7⅝	4¼	4¾	4½	4¾	Transwestern Oil Co.	750,000	$10	....	.....	....	0.48	0.06	13⅞	4⅝	..	..
5¼	2⅝	3¼	2⅞	3⅛	United Gas Corp.	7,818,959	$1	....	.....	....	0.25	0.20	13⅞	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

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